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BOMBER BLITZ!



WAR MONTHLY

ISSUE 12

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Editor: Len Cacutt

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Design: Eric North

△▷ *The Winter War. A Finnish soldier, properly clad against the rigors of a northern winter, inspects a Russian T26B-2, abandoned after its tracks had been blown off.*

▷ *An unusual sight—a Bristol Blenheim Mk 1 bomber wearing the swastika! But not for Germany—in this form, the swastika is the emblem of the Finnish Air Force. This aircraft is being prepared to hit at invading Russians.*

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U.P.I.

Finnish War Archives

YAMATO AND MUSASHI

The world's greatest battleships
were also Japan's doomed giants



U.S. Navy

A violent sea is tamed by the mightiest battleship in the Imperial Japanese Navy. The 64,000-ton Yamato was, along with Musashi, built to be unsinkable. Her 23,500 tons of armor could withstand direct hits which would sink lesser craft.

'These battleships will be as useful in modern warfare as a *samurai* sword,' predicted Admiral Isoroku Yamamoto, C-in-C of Japan's Combined Fleet. He was talking about *Yamato* and *Musashi*, the largest and most powerful battleships ever built. Yet on 16 December 1941, days after Pearl Harbor and sinking the *Prince of Wales* and *Repulse*—the first ever capital ships sunk *at sea* by air attack—the Imperial Japanese Navy took delivery of the 64,000-ton *Yamato*. She was already obsolescent.

The first *Yamato*-class designs envisaged ships 965ft overall with a standard 69,500-ton displacement. By July 1936, the 22nd design since the project's beginning in 1934, plans were for a 64,000-ton ship 860ft long. Two pairs of propellers, one steam-turbine driven, the other diesel powered, would give the reduced 27-knot requirement. The heavier diesels were compensated for by lower fuel consumption. However, trouble with experimental diesels led to only steam-turbines being adopted for the new battleships. The 23rd and final design was finished in March 1937, and *Yamato*'s keel laid at Kure Navy Yard on 4 November. Advance preparations included deepening the building dock; providing a crane able to lift single 100-ton armor plates; and erecting 20ft high fences, protective roofing and rope screens to hide construction. Similar precautions were taken at the Mitsubishi Company's Nagasaki yard where the keel of *Musashi* was laid on 29 March 1938. Her launching weight of 35,737 tons (surpassed only by the liner *Queen Mary*) necessitated a 13ft-wide slipway, the world's largest. The keel of a third vessel, *Shinano*, converted to an aircraft carrier while building, was laid in Yokosuka Navy Yard on 4 May 1940. These were the only ships of the class to be launched: a fourth, hull number 111, was scrapped at Kure in December 1941 when about 30 per cent complete. Orders for hulls 797, 798 and 799 (two planned to mount 6 x 20in guns) were cancelled in 1942.

A striking feature of *Yamato* (statistics also apply to

Musashi) was the great width of her beam—127ft 8in. There was a need for the shallowest possible draught in Japan's coastal waters. The ship's vital parts had to be packed into the smallest space to have maximum armor protection without exceeding the designed displacement. Fully loaded, displacing 72,809 tons, *Yamato* had the relatively shallow mean draught of 35ft 6in. Vital machinery was crammed into a length representing only 53.5 per cent of her total waterline; achieved by arranging the 12 x 13,500hp boilers in four rows of three, each headed by and linked to one of the four turbines. This area was protected by 16in plates of Vickers armor, the largest weighing 70 tons. Side armor extended all the way from the 7 $\frac{3}{4}$ in armored deck down to the bottom hull plates. Sloping slightly outwards to minimise shell impact, they formed a supposed impregnable bulkhead within a comparatively lightly armored torpedo-bulge. Compartments housing main and auxiliary steering gear—the ship had two rudders, provision of a second fairly late in building perhaps influenced by the fate of the German *Bismarck* in May 1941—were similarly protected. The 16in plates could withstand an 18in shell hit from 13-18 mile ranges. The 7 $\frac{3}{4}$ in deck was proof against anything under a 2,200lb armor-piercing bomb dropped from 10,000ft. The heaviest armor of all, 22in front plates on the main gun turrets, could withstand an 18in shell travelling at 550ft per second. Some of the heaviest side armor plates also served as longitudinal hull strength members. Except on longitudinal members and other vital lower parts, more weight was saved by electric welding.

Japan spent an estimated £4 million on increasing steel production and developing hardening processes to make *Yamato* truly 'unsinkable'. Even lesser protection was impressive. Upper deck 1 $\frac{1}{2}$ in-1 $\frac{3}{4}$ in armor could withstand a 500lb bomb. Two feet below the armored deck, a splinter-proof $\frac{1}{4}$ in Ducol steel screen shielded crewmen. Magazine floors were given 2in-3in plating to absorb torpedo or mine explosions beneath the ship's double bottom. The funnel



U.S. Navy



This diagram shows the massive bulk of one of the Yamato's three 18.1in gun turrets. Each turret housed three guns and weighed 2,774 tons apiece. The guns fired 3,240lb shells to a range of some 26 miles at 45° elevation. AA positions and boats on deck had to be shielded from the blast.



△ 24 October 1944. Musashi was attacked by the full weight of American naval air power. For 6½ hours—from 1026 to 1650—Musashi's decks were strafed and shelled.
 △▷ At 1715 the battle flag was lowered and the order 'Abandon ship!' given. Finally, down at the bows, she rolled to port and sank at 1925. (Inset) Vice Admiral Takeo Kurita commander of the 1st Striking Force.

Peter Sarson/Tony Bryan

was shielded by specially designed *perforated* 15in plates. The total 23,500 tons of armor protection on *Yamato* was about 34 per cent of her total tonnage: she and *Musashi* were the most heavily armored ships ever built.

So *Yamato* could take punishment, and she could most certainly hand it out. Her 18in guns threw 3,240lb shells (1,000lb heavier than 16in shells) 25 miles. The British light battlecruiser *Furious* (1917) had been designed to mount two 18in, but she was converted into an aircraft carrier and her big guns remounted singly in two monitors, sold by 1927. The Japanese giants mounted 9 x 18in; some idea of the weight problem can be gained by comparing these guns with the 16in of *Nagato*. The smaller battleship's four twin turrets totalled 6,827 tons; *Yamato*'s triple turrets each weighed 2,774 tons. The guns and their mountings were cast at Kure, and a specially built ship transported *Musashi*'s to Nagasaki. The muzzle blast of the triple-mounted 18in barrels (up to 16ft away) was six times the 'danger point' at which vulnerable installations would be badly damaged and men knocked unconscious. Boats and fittings on the main deck had to be specially protected, while all AA positions there had to be shielded.

In spite of a massive bulbous bow—experiments with 50 ship models in a special 805ft testing tank had shown that this minimised hull resistance and increased engine efficiency—*Yamato* was a handsome ship with good handling qualities—a comparatively small turning circle and a freedom from excessive heel. Most Japanese battleship foremasts had a clumsy 'pagoda' outline but *Yamato*'s was a streamlined cylindrical tower surmounted by triple 49ft rangefinders and the main armament director. A Type 21 air/surface radar was later mounted atop the rangefinders.

She was a good ship to sail in, with air-conditioned officers' cabins and ample crew quarters designed for a 2,200 complement, but more often housing a war-time 2,500. In comfort, *Yamato* was reckoned inferior to *Musashi* which sailors nicknamed 'The Palace'.

Both ships were launched as secretly as they had been built. Men working on *Musashi* were not allowed to leave Nagasaki Yard before the launch; they worked a final 24-hour shift to ready her, while troops sealed off the Yard from Nagasaki city. The Imperial Navy's officers, like most contemporary naval officers, still saw battleships as the major striking force, with carriers in a secondary role.

On 12 February 1942, Yamamoto hoisted his flag in *Yamato*, the new flagship of his *Rengo Kantai* (Combined Fleet). As she lay at Hashira anchorage in Hiroshima Bay, the C-in-C called senior officers aboard for four days' war-gaming to decide Japan's next move. The result was 'Plan A.F.', to capture Midway atoll, a move that Yamamoto hoped would lure the US Pacific Fleet out to battle—and destruction.

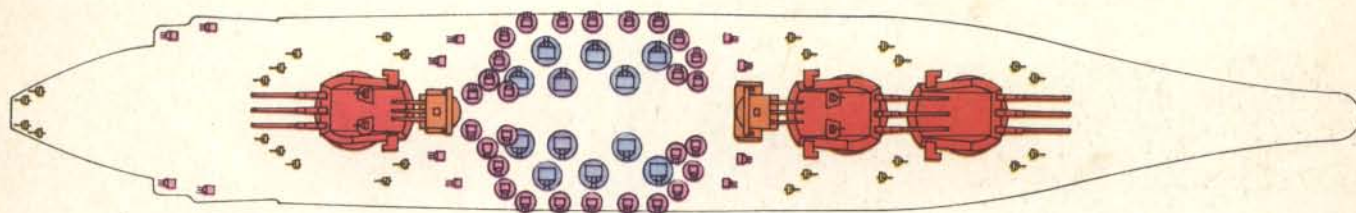
Yamamoto's 162 warships included 11 battleships and eight carriers. Admiral Chester W. Nimitz, US C-in-C Pacific, had 76 ships, '... three (aircraft carriers) are all that stand between the Japanese fleet and the American coastline'.

Thanks to the cracking of Japan's top-secret naval code, Nimitz was able to establish where and when the attack would come. Plan A.F.'s weaknesses did the rest. Yamamoto's mistake in positioning the main body, with flagship *Yamato* and six other battleships, 300 miles astern of the First Carrier Striking Force, was compounded by over-confidence that led to neglect of air and submarine recon-



- | | |
|--|--|
|  26 x 1 (25mm) |  9 – 18.1in (3 x 3) |
|  40 x 3 (25mm) |  24 – 5in AA (12 x 2) |
|  6 – 6.1in (2 x 3) | |

▽ This plan of the Yamato's deck shows her armed as she was in early 1945. By then the giant was among the best-equipped battleships in the Imperial Japanese Navy. The immense array of 25mm guns threw out a huge weight of AA fire. But air power, plus torpedoes, finished her.



naissance. Nimitz's advance knowledge swiftly gave him a fairly clear picture and, from his HQ in Pearl Harbor, he exerted effective overall command—unlike Yamamoto, keeping radio silence in *Yamato* some 10 hours behind his carriers. Lacking radar, three carriers were surprised and sunk with planes jamming their decks. On *Yamato* some 30 minutes later, Yamamoto displayed unwonted emotion on hearing of the mortal damage inflicted. His reaction was to order the battleships on to Midway at full speed. In anti-submarine formation, zig-zagging at 20 knots, *Yamato* and her consorts entered thick fog. With most aboard tense for a collision, Yamamoto called a conference. Signals were sent ordering other units to rendezvous with Yamamoto for a night bombardment of Midway.

An error by Yamamoto, and wary American maneuvering, ruled out a night action, leaving the Japanese commander to consider the risk of a daylight attack without air support. The risk was too great. Shadowed by US aircraft, Yamamoto led his force back to Japan, spending the voyage in the seclusion of his great cabin aboard the battleship he must have despised even more deeply. Worse than the loss of four carriers was losing 250 aircraft with most of their trained crews. Yamamoto's bitterness can hardly have abated when the newly-completed *Musashi* joined the fleet on 5 August 1942, but at least he got the third and last 'super-ship', *Shinano*, converted to a heavy carrier.

Imperial Headquarters had not lost faith in the battleships. Late in August, Yamamoto's flag flew in *Yamato* as she headed a strong force bound for Truk atoll, from which the Navy was to support the Army's struggle for Guadalcanal in the Solomon Islands. Guadalcanal was lost by February 1943, when *Musashi*, having joined *Yamato* at Truk,

replaced her as flagship. At the end of April 1943, a small white box was carried aboard *Musashi*—the ashes of Adm. Yamamoto who had been shot down over Bougainville island. Both the great ships dropped anchor at Yokosuka on 21 May. Headed by the Emperor himself, naval officers trooped aboard to pay their last respects. On *Yamato*, they found a poem by the Admiral. It began: 'So many are dead, I cannot face the Emperor . . . soon I shall join the young dead soldiers'.

After a spell in dry dock at Kure, *Yamato* and *Musashi* joined the new C-in-C, Admiral Mineichi Koga, at Truk in the autumn. *Yamato*'s first 'action' came late in December, as she prepared for Operation *Ro*, an assault on the central Solomons. As she entered Truk anchorage, a single torpedo from the submarine *Skate* struck her aft on the starboard hull, driving in the heavy side armor more than 3ft and buckling its brackets. *Yamato* shipped 3,000 tons of water and was not operational until April 1944. Meanwhile *Musashi* joined her on the casualty list. When heavy air attacks forced Koga to leave Truk for the Palau islands, *Musashi* sailed as his flagship. US carrier planes struck at Palau, while seven submarines ringed the islands to intercept ships flushed from cover. On 29 March, the submarine *Tunny* torpedoed *Musashi*'s port bow, killing or wounding 18 men. Koga ordered her back to Japan and himself boarded an aircraft to disappear without trace en route for a new base.

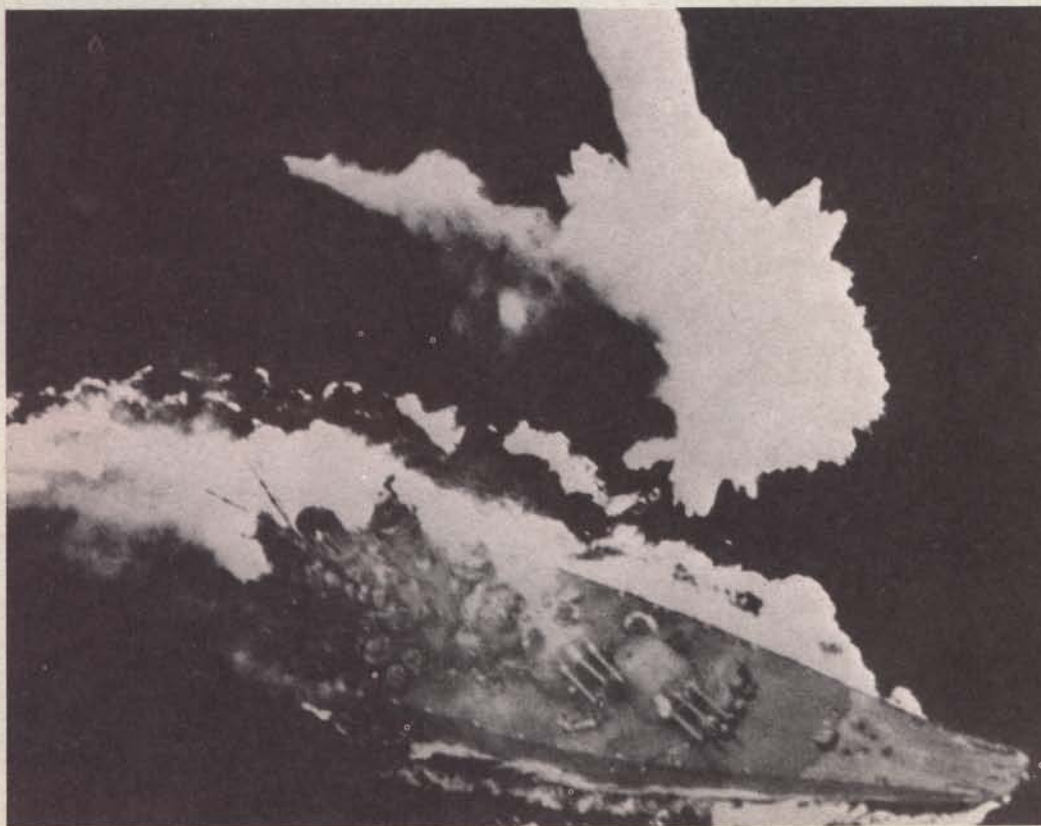
Admiral Soemu Toyoda completed Koga's organization of the new 1st Fleet, remaining carriers were concentrated in Vice-Admiral Jisaburo Ozawa's 3rd Fleet and the battleships formed part of Vice-Admiral Takeo Kurita's 2nd Fleet. Vice-Admiral Matome Ugaki, commanding 1st Battleship



U.S. Navy



U.S. Navy



U.S. Navy

◁△ A combat photograph showing, for the first time, the Yamato under attack by American air power in the Battle of Sibuyan Sea. On this occasion, the Yamato escaped destruction—thanks to her superb handling qualities.

△ 19 March 1945. Yamato is attacked by planes from the American carrier Hornet in Kure Bay off Honshu Island. Here, her fine maneuverability was fully put to the test as she strove to avoid American bombs. But even the nimble Yamato could not elude all the bombs. She was severely damaged after several direct hits, only surviving because of her formidable armor.

◁ 7 April 1945. Yamato under attack south of Kyushu. She sank at 1423.

Division (*Yamato*, *Musashi*, *Nagato*), flew his flag in *Yamato*. His force made its base at Tawi-Tawi in the Sulu islands, off NE Borneo. In May-June 1944, Ugaki's battleships were ordered to take part in Operation *Kon*, to blast the newly-landed Allies off Biak island, NW of New Guinea, but were recalled into the Philippine Sea. Here Ozawa hoped to destroy the American fleet 'with one blow', but the blow was never struck and battleships played no part in the campaign which crippled Japanese naval airpower. Three carriers went down and close on 500 aircraft and their crews were lost in such actions as 'The Great Marianas Turkey Shoot' of 19 June. Soon the Philippines were threatened, while *Yamato* and *Musashi*, the *hashira* ('stay-at-home') fleet, as other ships' crews began to call them, were back in Japan.

For *Yamato* and *Musashi*, the build-up for the Philippines began in July 1944 when, after at last acquiring radar and radar-directed fire-control for their great guns, they went south for intensive training in the Lingga archipelago, south of Singapore. The battleships resumed their role as the main striking force; Japan's carriers could no longer spearhead a battle. North of Leyte Island, the carriers were to draw off American air cover and give battleships a chance against the vulnerable landing forces. On 18 October 1944, hearing of the initial landings in Leyte Gulf, Imperial Headquarters ordered Operation *Sho-1* (Victory) to begin. The two leviathans sailed from Lingga refuelling at Brunei among the three other battleships, 12 cruisers, and 15 destroyers of Kurita's 1st Striking Force.

Early on 23 October, NE of Palawan island, US submarines sank two of Kurita's heavy cruisers, one flying Kurita's flag. In the confusion of panic anti-submarine action, ten hours passed before Kurita could join Ugaki aboard *Yamato* and resume command; by then three US carrier task groups had Kurita under observation. Determined to rendezvous with two other squadrons in the Sulu Sea, Kurita pressed on without air cover, telling his staff: 'It would be shameful for the fleet to remain intact while our nation perishes . . . you must remember that miracles do happen.' But he would never keep his appointment—the other forces were annihilated in or fled from Surigao Strait on the night of 24-25 October—and no miracle would save *Musashi*, main target of American aircraft for the next five hours.

Bombs made little impression

At 1026, 12 Curtiss Helldiver bombers, 12 Grumman Avenger torpedo planes and 21 Grumman Hellcat fighters hit Kurita's force in Tablas Strait. The Japanese ships threw up a fierce barrage, knocking down two Avengers, but the Americans pressed home attacks on *Yamato* and *Musashi*. Bombs made little impression on their armored decks; torpedoes would prove more effective. During the first 20 minutes *Musashi* took four torpedoes on the port side and one to starboard. But now the design proved its intrinsic worth: *Musashi* stayed on course without apparent difficulty. A second 42-aircraft strike arrived around noon. Again *Musashi* bore the brunt, taking two bombs and two torpedoes, and began to show signs of slowing down. After a third strike by 68 aircraft at 1325, *Musashi's* speed dropped to about 20 knots. She had taken nine torpedoes: her starboard bow twisted into a huge scoop into which water was forced by the ship's own momentum. Yet counter-flooding kept her under way with only a slight list to port, while seven hits and some 15 near-misses from bombs did

little structural damage. *Yamato* took two more bombs without effect. Many of the attackers were launched as quickly as possible carrying only 500lb GP bombs.

Musashi plowed on, but now her crew knew she was in bad shape. The AA gunners were making poor practice, and Rear Admiral Toshihara Inoguchi at first refused to allow the 18in to fire *sanshiki-dan* ('case-shot', with a 'shotgun' scatter of 20mm incendiary projectiles, supposedly effective over several thousand yards against aircraft) for fear of barrel damage. By early afternoon, as *Musashi's* bow sank lower and she began to fall behind, it became obvious he must change his mind if she was to survive.

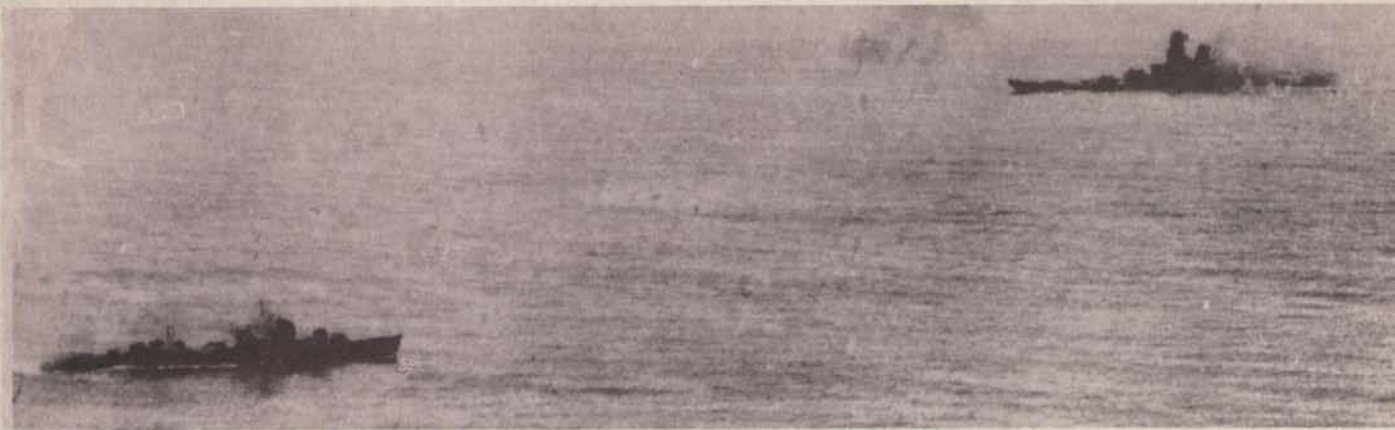
By 1500, after another 30-plane strike which *sanshiki-dan* did little to inhibit, *Musashi's* speed had dropped to 12 knots. Kurita, about to reverse course hoping to lose the attackers, ordered her to drop out of formation. Only one cruiser remained with the stricken giant when more than 100 aircraft struck in wave after wave from 1515.

Death blows from Hellcats

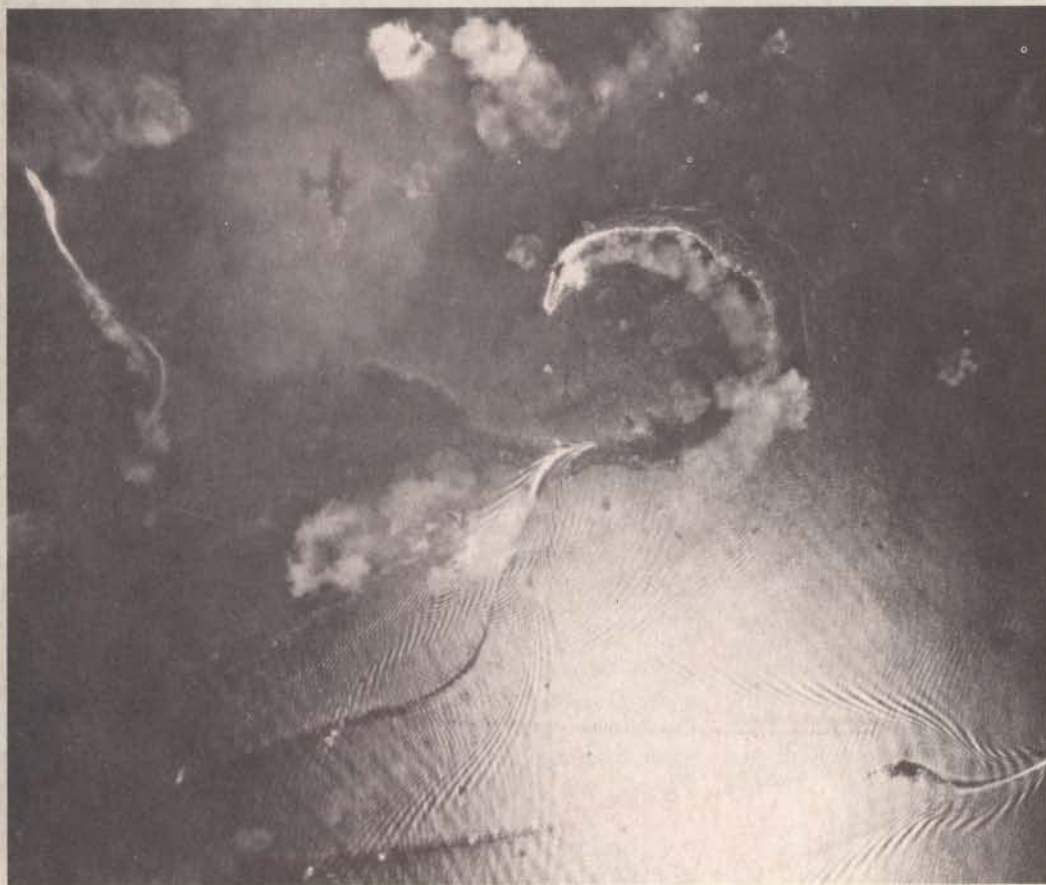
The death blows were dealt by 12 Hellcats, nine Helldivers with 1,000lb bombs and eight Avenger torpedo planes from *Enterprise*. They found *Musashi* well down by the bows, staggering along at 12 knots and leaving a broad wake of oil. As the Helldivers plunged, Hellcats hammered her decks with .5 machine-gun fire and 5in rockets. Eleven more bombs reduced the already battered upper works to twisted wreckage, and a low-level torpedo attack ripped out her heart—all eight pilots claimed hits. At 1650, when the planes turned away, *Musashi* was listing 15° to port, her bows under water, the forward turrets islands, and making six knots. Inoguchi, mortally wounded, wanted to beach her on Sibuyan, but she was now so far over that use of the rudder risked an immediate capsize. Calling his remaining officers together, Inoguchi gave his sword to a young ensign, giving another a letter asking the Emperor's forgiveness. At 1715 the battle-flag was lowered and given to a strong swimmer, as was the Emperor's portrait. 'Abandon ship' was ordered, but when *Musashi* rolled over to port and sank at 1925, Inoguchi, Captain Kenchika Kato, who had lashed himself to the compass binnacle, and 1,023 of her 2,400-strong crew were still aboard. The battleship had taken between 11 and 19 torpedoes and at least 17 direct bomb hits. Kurita's ships had only downed 30 of their tormentors.

Although *Musashi's* sacrifice had saved all but one of Kurita's 28 other ships from significant damage, his reversal of course lent weight to American pilots' reports that he was retreating with heavy losses. The aircrews cannot fairly be blamed for an over-optimistic verdict, or for concentrating on a single prestige ship. But Admiral William F. 'Bull' Halsey would not escape criticism: at 1950, accepting that Kurita was finished, he led 15 fleet carriers and eight modern battleships on a chase after Ozawa. This left San Bernardino Strait unguarded, with only older battleships and light carriers to cover the landings.

At 0645 on 25 October, having reversed course again and cleared San Bernardino Strait at night, Kurita made contact with the six escort carriers, three destroyers and four destroyer-escorts of Rear Admiral Clifton A. F. Sprague's 'Taffy 3' group. But instead of sending light cruisers and destroyers to make torpedo attacks, while bringing his big ships out of their circular AA formation, the excited and combat-weary Kurita ordered 'General Chase'. At 0659, *Yamato's* great guns spoke in anger for the first time, at a range of 20 miles.



U.S. Navy

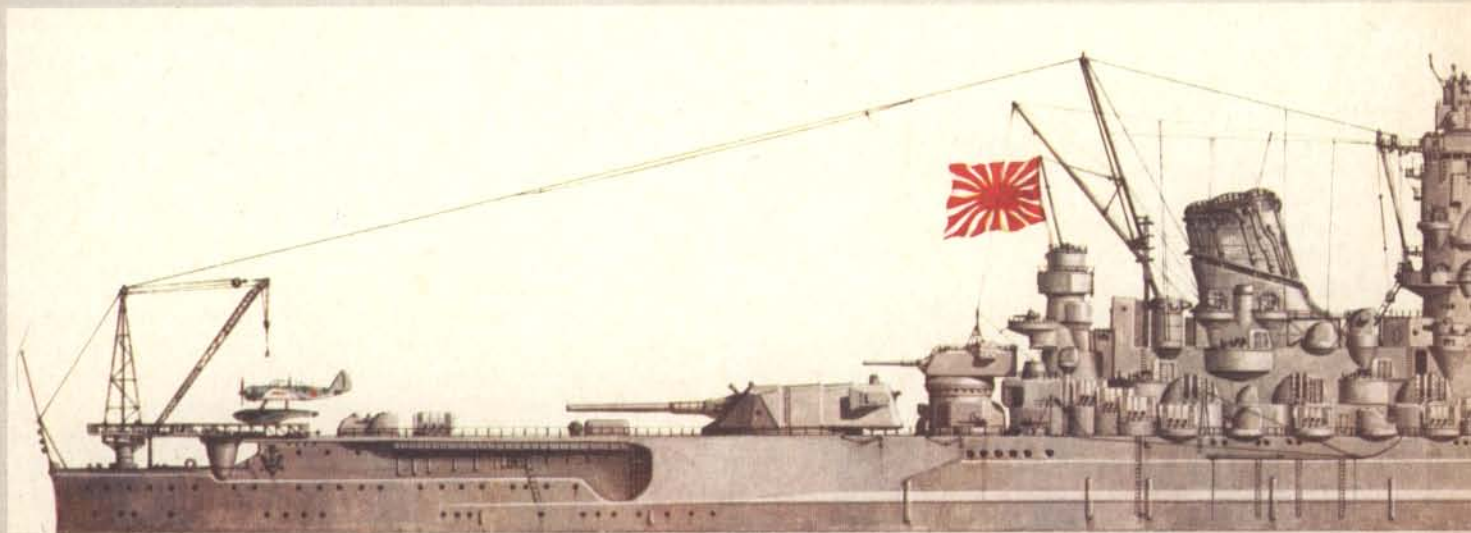


△ Two Japanese destroyers, a 2,701-ton Type B in the foreground, circle the crippled and sinking Yamato on 7 April 1945. She was already badly damaged when at least five torpedoes smashed open her port side. The flooding of the engine room and boiler rooms was ordered. Several hundred men were scalded to death as the boilers burst. Hundreds more drowned when she sank.

◁ More combat photography shows clearly the fine maneuverability of Yamato. Here she is under US air attack off Tablas Strait during the battle of Leyte Gulf in October 1944. Silhouetted against thin cloud is one of the many attacking aircraft.

▽ The huge bulk of Yamato can be gauged by comparison with the Aichi float-plane.

U.S. Navy



In spite of confusion among Kurita's ships, gunnery was excellent. As Sprague ordered his carriers to make smoke and run, sending out a 'May Day' call in clear language, multi-colored marker dyes from the Japanese shells blossomed near his vulnerable 'flat-tops'. A rain squall hid them for 10 precious minutes as they worked up speed to launch aircraft—Japanese radar proving inadequate for blind firing, but at 0716 the rain lifted. Desperate to buy time, Sprague's seven destroyers raced towards a Japanese battle line that outgunned them by more than forty to one, weaving between shell splashes and closed to under 10,000 yards before launching torpedoes. The cruiser *Kumano* took crippling hits, while the *Heermann* sent a torpedo spread at *Yamato*.

Swinging away, the Japanese giant found herself between torpedo tracks heading for her stern. She was forced to run at full speed out of the action for 10 minutes. By 0742, when the destroyers launched a second attack, Sprague's planes were up, swarming to the attack, making 'dry' runs when their loads were expended. Such determination seemed to confirm Kurita in his mistaken belief that he was engaging the heavy carriers of Halsey's fleet. At 0915, when three US destroyers were gone, one carrier ablaze, and Japanese cruisers within 10,000 yards of the remainder, Kurita ordered the battle to be broken off. *Yamato* and her consorts fled back to Brunei, harassed all the way, although two more bomb hits did no more significant damage than the 104 rounds of 18in she had expended against Sprague's ships. Heavy air attacks soon forced a withdrawal from Brunei; on 23 November 1944, *Yamato* came home to Japan. She would only once more venture outside the Inland Sea, where aircraft of Task Force 58 inflicted minor damage on her during a raid on 19 March 1945.

Meanwhile the third and last *Yamato*-class ship had begun and ended a career as inglorious as any in naval history. *Shinano* mounted a formidable AA battery of 16 x 5in guns, 145 x 25mm and 336 x 5in rocket launchers, and with her multiplicity of watertight compartments she was deemed unsinkable. But when she sailed at 1800 on 29 November 1944, rushed away from Yokosuka under threat of air raids, her watertight doors lacked gaskets, open channels awaiting piping ran between her compartments, steam pumps had not been fitted and hand pumps were few.

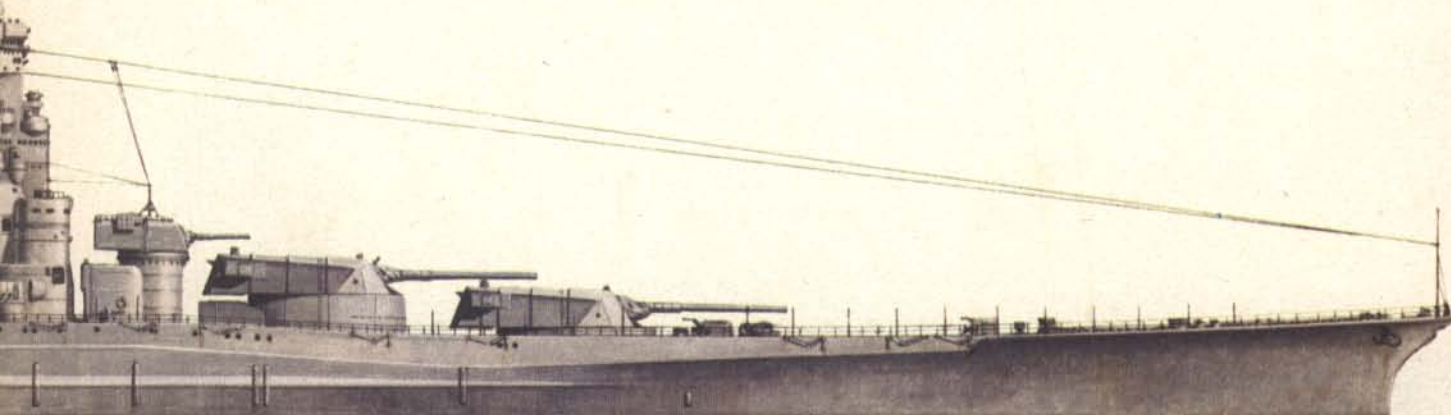
The submarine *Archerfish*'s radar picked up *Shinano* and her three destroyers at 2048 as they moved down the coast. Surfacing, the submarine took up a 20-knot chase in the

darkness, able to keep in touch only because the ships zig-zagged—as an anti-submarine measure! At 0300 on 30 November, a sharp change of course by *Shinano* made her a perfect target, broadside on to *Archerfish* at 1,400 yards. Commander Joseph Enright fired a full spread of six 21in torpedoes at 0310. At least four struck the huge carrier. But *Musashi*'s ordeal had shown what punishment the *Yamato*-class could take, and although he could easily have made harbor, or at worst beached his ship, Captain Toshio Abe ordered course to be held at 20 knots. For seven hours water poured in, flooding 'watertight' compartments and springing badly welded hull members. Too late, Abe realized the full peril. At 1055, *Shinano* rolled over to starboard and sank stern first, taking down the Captain and 500 of his 1,400-strong crew. Her life as an operational warship had lasted only 17 hours.

Early in 1945, the Imperial Navy's surviving warships swung at anchor in the Inland Sea, lacking fuel or air cover for effective sorties. At Imperial Headquarters, the Army angrily demanded that the Navy, in particular *Yamato*—'that floating hotel for idle, inept admirals'—match the self-sacrifice of *kamikaze* flyers, submariners and the island garrisons fighting to the last man.

When the Americans cornered the garrison of Okinawa, Adm. Toyoda, could resist no longer. He must throw away as many ships as could still be fuelled, *Yamato* among them, in an empty gesture to satisfy national honor and as an inspiration to the civilian millions soon to be called upon to make the final suicidal stand on the beaches of the homeland. On 5 April 1945, he issued orders for Operation *Ten-Go*. Vice-Admiral Seiichi Ito's 'Special Sea Attack Force' (*Yamato*, the light cruiser *Yahagi* and eight destroyers) was (in Toyoda's words) to make 'the most tragic and heroic attack of the war'. In support of a massive *kamikaze* effort, the ships were to sail for Okinawa; draw off air cover from the landing areas; smash through the US Navy's screen; run aground and as armored citadels hammer enemy-occupied areas until ammunition was exhausted. Then their crews were to go ashore and fight to the death.

With fuel for a one-way trip and magazines crammed with more than 1,000 rounds of 18in shells. *Yamato* sailed from Tokuyama at 1500 hours on 6 April 1945. Around 1800, shortly before clearing Bungo Strait, while the crew answered a patriotic exhortation from Ariga with *banzai* for the Emperor, US submarines *Hackleback* and *Threadfin* sighted the squadron. Evading destroyer attack, they flashed



Peter Sarson/Tony Bryan

a warning south. Three carrier task groups moved northeast from Okinawa, with orders a for dawn reconnaissance.

At 0832 on 7 April, a scout plane picked up *Yamato* and her escort south of Kyushu, heading SW at 22 knots. Ordering battleships to stand ready for any eventuality north of Okinawa, Admiral Raymond A. Spruance told Vice-Admiral Marc A. Mitscher: 'You take them'. Between 1000 and 1100, a dozen carriers from his Task Force 58 flew off 386 aircraft: 180 Hellcat and Corsair fighters, each carrying three 500lb bombs; 131 Avenger torpedo planes; and 75 Helldivers, each with one semi-armor-piercing or general purpose 1,000lb bomb and two 250-pounders.

Two Martin Mariner flying boats sighted Ito's ships at 1014, just as he swung south with 300 miles to go. Now they shadowed the small fleet, screened from *Yamato's* 18in *sanshiki-dan* by low cloud and frequent showers, while they guided in the carrier planes. Apart from two seaplanes that remained unlaunched aboard *Yamato* and *Yahagi*, no Japanese aircraft were to be seen. At 1210, the destroyer *Asashimo*, which had dropped back with engine trouble, flashed a brief warning as around 100 aircraft found her. At 1220, *Yamato's* radar located the first attack wave 18 miles to port. At 1232, about 200 planes were in sight at 13 miles range. To many American flyers, groping their way through blinding rain, massive bursts of *sanshiki-dan* were the first indication of their target's proximity.

The first wave struck at 1241, as *Yamato* raced south at close on 30 knots, the eight escorts in diamond formation around her. With only 3,000ft cloud ceiling, the planes came down in small groups to make low-level attacks. *Yamato's* great guns soon fell silent; their blast made it impossible for gunners to operate her massed 25mm batteries, but a heavy barrage met the Americans. To little avail: by 1248 one destroyer had sunk, *Yahagi* was crippled and *Yamato* had taken two bombs amidships as well as a torpedo in the port bow. Two more torpedoes struck there minutes later, while bombs silenced more of the battleship's AA guns. But *Yamato*, taking water and listing slightly to port, was still full of fight when a strike of 120 planes arrived at 1300. In less than 15 minutes, five more torpedoes ripped open *Yamato's* port side, while bombs and machine-gun fire silenced almost every remaining gun. Soon the list to port

was too great for the damage-control tanks to correct. To bring his ship back on an even keel, Ariga ordered the flooding of the lowest starboard compartments, the engine and boiler rooms. Several hundred men drowned or were scalded to death at their posts as the sea rushed in. The cruiser *Yahagi* now sank after taking seven torpedoes and 12 bombs.

From 1400 onwards, aircraft from *Intrepid* and *Yorktown* closed in for the kill. *Yamato* lay over at 35°, creeping at 7 knots in a circle with rudder jammed hard aport and only one working pair of propellers. Few guns spoke from her shattered deck. All external and internal communications were severed. The sick bay was gutted, doctors, orderlies and patients all dead. Coming in on the starboard side at the head of six Avengers from *Yorktown*, Lieutenant Thomas Stetson saw that *Yamato's* hull lay exposed beneath the armored belt. At least five of the Avengers' torpedoes ran straight. The last struck home at 1417.

Aboard the doomed battleship, Adm. Ito ordered the crew away at around 1405, shaking hands with his officers before retiring to his cabin to face death alone. Ariga, like Kato in *Musashi*, saw to the safety of the Emperor's portrait before having himself lashed to the compass mounting. The ship now listed so steeply that her battle-flag only just cleared the wave tops. But of more than 2,700 men aboard, only about 300 had left before the sudden end. As the last torpedo struck, the remaining shells, torn loose in *Yamato's* magazines by the list, set off a chain of internal explosions. At 1423, with a massive eruption of orange-brown smoke and flame, the last of the Japanese 'super-ships' rolled briefly upright and then slid quickly beneath the waters of the East China Sea. She had suffered at least 10 torpedoes, seven direct hits from bombs and innumerable near-misses. According to *Yahagi's* captain, with survivors in the water, the crew gave *Yamato* a last *banzai* as she disappeared. Then, while American machine-guns ripped the water all around, they began to sing the Japanese anthem.

Yamato's sacrifice was in vain; as wasted as the millions of *yen* and years of effort Japan had squandered producing *Yamato*, and her sisters. The day of the battleship was drawing to a close before they were launched.

Richard O'Neill



The proud *Yamato's* funeral pyre. This is the explosion which sent the twisted remains down into over 3,200ft of water in the East China Sea south of Kyushu on 7 April 1945. Over 2,000 of her crew and Adm. Ito went down with her.



Maida—victory in a morning upon a fair field of battle for the equivalent of six British infantry battalions over 10 French. Sir John Stuart sees his Light Brigade rout the French left wing. Behind him are killed 78th Foot Highlanders.

MAIDA 1806

**Napoleon's elite troops faced the opposition with contempt.
But in three hours the Frenchmen were swept from the field**

Maida Vale is a famous district of London, but few know the reason for the name. It comes from the tiny village of San Pietro di Maida in Calabria, Southern Italy, where a small British army defeated a larger French force on 4 July 1806. It was the first such victory in five years and a London building contractor celebrated by naming the road he was constructing—Maida Hill. As the area was built up a Maida Vale Road was added which gave the name to the district.

What was a British force doing in the toe of Italy in 1806? The British Prime Minister, William Pitt, decided to send an army into the Mediterranean to act with the Russians and Austrians against the French. A British force of about 7,000 men under Lieutenant-General Sir James Henry Craig rendezvoused at sea with 14,000 Russians. They landed in the Bay of Naples on 20 November 1805 to be greeted with the news of the Austrian capitulation to Napoleon at Ulm on 20 October.

The Bourbon Court of Naples was in disarray, its king ineffective and forceful Queen Carolina full of grandiose schemes. On 22 December came the news of Napoleon's

Sailing from Palermo, the British army was to land behind the French, inspire Calabrian insurrection and perhaps help besieged Gaeta. Maida allowed it a two-month stay in Italy. Gaeta fell on 18 July 1806, a fortnight after the battle.





Corporal, De Watteville's Regiment

Six companies of these Swiss mercenaries were at Maida; the other four held St Euphemia. Descended from a 1671 unit in French service, Francis de Watteville's Regiment joined the British Army as regular line infantry wearing black velvet facings to their tunics.



Corporal, Premier Régiment Suisse

This NCO is one of 16,000 Swiss obliged to serve Napoleon by 1803 Treaty with occupying French. Col. André Raquetly's 1st Regiment was only formed in March 1805. If their musketry had been as good as the old Swiss Royal Guards' they might have benefited more from looking like redcoats.

When Digonet's and Cole's brigades clashed, only two of the rival lines of infantry actually crossed bayonets. Perhaps the 27th (Inniskilling) Regt. are shown here charging into the 1,350-strong 23^{ère} Légère. The result of Maida, first Napoleonic War battle between British and French troops, was repeated in a score of actions up to 1815. French infantry lacked the firing practice and tight discipline of the redcoats. At Maida, the French were not even in column, but in three-deep line, yet had the artillery, cavalry and tirailleur help needed by the column.



annihilating victory over the Russian and Austrian Emperors at Austerlitz. There was now no hope of opposing the 30,000 troops sent to reinforce the already considerable French army in Northern Italy. The Russians withdrew to Corfu; the Neapolitan Court and the British forces to Sicily. Shortly afterwards French forces occupied the whole of Italy except the fortress of Gaeta. They could not immediately obey Napoleon's order to throw the Bourbons out of Sicily because of the presence of the British garrison there and the fact that they had no boats with which to cross the Straits of Messina.

The situation remained quiet for some months. In April 1806, Sir James Craig retired on grounds of ill-health and handed over the British forces in Sicily to the temporary command of 47-year-old Major-General Sir John Stuart. Craig also handed on an important order that the main task was to defend Sicily. Meanwhile the French were content to occupy the toe of Italy and build up very large stocks of guns, ammunition, and supplies for the moment when an invasion of Sicily became practicable.

Sir John Stuart was not a brilliant general but he showed a good deal of common sense. He was pestered by the Court of Naples, particularly Queen Carolina, to invade Calabria, being assured that the local population would immediately rise against the French. Many other weird suggestions were made to him for the employment of his troops. He withstood them all until, in June, he thought the French commander, *Général de Division* Jean L. E. Reynier, had only small forces at his immediate command around Reggio Calabria. He also believed that the Calabrians would rise in revolt if a British force landed.

He embarked an army at Palermo made up of the troops detailed in the accompanying panel. It was difficult to carry animals in the transports available, so he took only 16 horses (for commanders and aides) and mules for eight mountain guns. In order to keep the force 'light' he ordered that the men's packs be left in store in Sicily. Before the embarkation Stuart detailed the eight battalion companies of the 20th Foot to sail in *felucca* sailing boats along the coast past Reggio and Scilla, hoping to force Reynier to

The Expeditionary Force

LIGHT BRIGADE (*Kempt*)

470-man Light Battalion (6 companies)
150 'Flankers' (picked shots) from the 35th Foot
260 Corsican and Sicilian infantry (3 companies)

1ST BRIGADE (*Acland*)

650 Highlanders of the 78th Foot (all 10 companies)
600 men of the 81st Foot (8 battalion companies)

2ND BRIGADE (*Cole*)

500-man Grenadier Battalion (5 companies)
700 men of the 27th Foot (8 battalion companies)

3RD BRIGADE (*Oswald*)

650 men of the 58th Foot (8 battalion companies)
480 Swiss of De Watteville's Regiment (all 10 companies)

keep troops in those ports to counter this threat.

The transports, escorted by the frigate *Apollo* and two smaller warships, anchored in the Bay of Euphemia during the night of 30 June. Orders were given to disembark at dawn, and at 0200 the Corsican Rangers and all seven grenadier companies, under the command of Brigadier-General John Oswald, were put ashore to form a beach-head. A few French soldiers withdrew to the woods as the boats approached but there was no opposition to the landing.

A probe inland was to have been made as early as possible by Lieutenant-Colonel James Kempt's Light Brigade, but a large transport carrying it was late arriving at the anchorage. Realizing this, Oswald waited only to see boats of the second party reach the shore before moving off with his force towards the village of St. Euphemia.

The country away from the beach was very close, with small copses joined by thick undergrowth. The Corsican

Rangers, scouting through it, were met with musketry fire and eventually driven back on the main body. Oswald advanced rapidly, attacked a party of 400 Poles with a few Frenchmen on both flanks and put them to flight. Several of the Poles were killed and 82 captured. Oswald moved on and occupied St. Euphemia without encountering further opposition.

The whole force was ashore by midday on 1 July, and was drawn up in a defensive position, incorporating a tower, the Bastione di Malta, with the right flank on the sea and the left on St. Euphemia. Several grenadier companies were pushed on as far as Nicastro. The landing of the guns, reserve ammunition, rations and stores was a slow and somewhat dangerous operation owing to the heavy surf, and it was not completed until the afternoon of the 2nd. Sir John had to wait for these stores, but he also waited for the Calabrians to rise in response to proclamations distributed among them. Except for the arrival of a few hundred ragged, ill-armed and totally undisciplined brigands, effective only for guerilla warfare, he waited in vain. The better-class Calabrians waited until the battle was won before they rose against the French.

Afternoon reconnaissance

Another reason for pausing was that Stuart knew nothing of the enemy's strength or whereabouts. It was not until the morning of the 3rd that he heard that General Reynier had made a forced march from Reggio and was now bivouaced on the wooded slopes below the village of Maida, about eight miles away. Stuart reconnoitered the position in the afternoon and judged that it could only be attacked with hope of success on its left flank, the right being protected by thick brushwood and the center by the marshes of the river Lamato.

Nevertheless he felt that he must oppose the French rather than tamely re-embark, if only because of the many promises of support made to the Calabrians by the Court of Naples. Stuart's information was that Reynier had about 4,000 men and that he was expecting another 3,000 gathered from various small garrisons. He therefore decided to attack early the next day while he still had a slight numerical superiority over the enemy. Orders were given for a dawn march. His appreciation of the enemy's strength was at fault. Reynier, ignoring the threat posed by the 20th Foot in its *feluccas*, had marched directly upon Maida collecting all his outlying forces on his way. He faced Sir John with rather more than 7,000 infantry and 300 cavalry, which the British commander first knew about when he saw them deploying on the battlefield.

During the three-day wait, the engineers had constructed a trenched and sandbagged defensive position incorporating the tower, a precaution against the possibility of a re-embarkation under enemy pressure. This position was held by four companies of De Watteville's Swiss Mercenary Regiment, with three of the six field-guns. Sir John's plan was still to attack the French position on its left flank, and to do this he had to march his force along the coast to the mouth of the Lamato river. It set out at dawn in two parallel columns. The Light Brigade followed by Brigadier-General Galbraith Lowry Cole's 2nd Brigade on the landward side; and the 1st Brigade of Brigadier-General Wroth Palmer Acland followed by Oswald's reserve 3rd Brigade along the seashore.

The going was tough and progress slow, the landward columns floundering in marshy meadows and the seaward



General J. L. Ebenezer Reynier (1771-1814) lost four times to the British, Maida included, in ten years.



Major-General Sir John Stuart (1759-1815) began a career lit by Maida, with the Scots Guards, in America in 1778.



Parker Gallery

All along the line, battle is joined. A British 6pdr team rushes to support the infantry. On the right 35th Foot 'flankers' ford the Lamato to join the Corsican Rangers in their skirmish with 200 French tirailleurs.

ones having to cope with sand and shingle. When both eventually reached the river they turned inland onto drier ground and marched parallel to the river until they came out into the wide plain of Maida, cultivated fields crossed by narrow drainage ditches. Here they deployed into line; Kempt on the right, Acland in the center, Cole on the left and Oswald in reserve behind the center and left. Kempt's right was on the river and Cole's left close to thickly bushed country: the three brigades formed a front of about one-and-a-half miles.

Impregnable position abandoned

As they wheeled slowly into echelon of brigades the most surprising event of the day occurred. Reynier occupied a strong position, one which Sir John's later dispatch judged almost impregnable. Yet the French commander, having studied every British move from his commanding height, left his position, descended into the plain and prepared to meet the invaders in a similar formation of echelon of brigades.

A satisfactory reason for this has never been given. The answer lay possibly in Reynier's overweening sense of French world-wide superiority. With Napoleon's awe-inspiring victories in Europe as an example, this view might be excused in most commanders, but Reynier had been defeated in 1801 by British infantry in Egypt and he was to be twice more defeated by them after Maida. He certainly thought that his troops in Egypt were demoralized at being deserted by Napoleon and that they only surrendered in order to get back to France. Now Reynier would revenge his defeat with three well-trying regiments of French veterans, the *1ère Légère* (1st Light) being considered the finest infantry regiment in the French army.

Historians disagree about the French formation at Maida. Some confidently say that this battle was a foretaste of Wellington's many defensive victories in the Peninsula, where the French advanced in column and the British met them in line. That was definitely not the case at Maida. The

French left their camp in column but deployed on the plain long before the forces met. All accounts written by soldiers who fought in the battle show that two forces met line to line, the French three ranks deep, the British two deep. Though both armies' regulations prescribed a three deep line, a third rank was virtually useless except for filling gaps in the first two and passing loaded muskets forward. The British, adopting a thinner two-rank formation, compensated for their inferior numbers by getting equal firepower.

Before the main action Kempt, whose right was on the shallow and easily fordable Lamato river, sent 200 Corsican Rangers to scour the bushes on the far side of the river to guard against ambush. They were backed up by the light company of the 20th. Almost immediately the Corsicans were met by the fire of two companies of *tirailleurs*. They fell back in some disorder, and the light company had a serious attack to contend with. Its commander was killed, and not until Kempt sent over the 150 'flankers' of the 35th was the situation restored. The enemy broke and fled. The Corsican Rangers, now reformed, pursued them up the wooded hill towards Maida. The 'flankers' and the 20th returned to their brigade, where the latter took up a position of the right of the line.

Three battles in one

The main battle lasted less than three hours. It can conveniently be described in three phases, right, center and left, because each action was fought and completed almost independently of the rest. As the British were wheeling into line on their right, and the French were doing the same thing on their left, it was clear that the British Light Brigade's right and French left (*1ère Légère*) would meet while more distant formations were widely separated. It was now 0800.

The initial long-range volleys did little harm and both sides continued a slow advance. Then occurred one of two unusual accidents to have a decisive impact on the battle. Every man of the Light Brigade was carrying a blanket roll,

worn horse-collar-wise over the shoulders. Kempt, realizing they would have greater freedom of action without these, gave the order to halt when scarcely 100 yards from the enemy. The front rank was ordered to face about, so that each man could lift off the blanket of his opposite number. The French saw the redcoats' backs through the smoke left by earlier volleys and, being all too familiar with the sight of their enemies' backs, thought that the British were in retreat.

Not stopping to halt and fire what could have been a damaging volley they came forward with the bayonet at the double. When only 30 yards separated the forces the Light Brigade, now back in its normal line, fired one devastating volley which turned the *1ère Légère* into a panic stricken mob whose only wish was to escape up the scrub-covered hills behind them. General Compère, attempting to rally them, rode to the front and into the British line, but he was followed by only a handful of men all of whom were quickly killed or made prisoner. Compère was wounded and captured. The Light Brigade pursued its beaten enemy to Maida and beyond, killing many and taking more prisoners. Highly satisfactory though this action had been tactically, it had the disadvantage of leading the whole of the brigade away from the battlefield, upon which it did not appear again. The 58th Foot from Oswald's reserve brigade moved into ground vacated by the Light Brigade in order to protect Acland's right flank.

Under-age and new to action

The center of the line was held by Brig.-Gen. Acland's 1st Brigade with the 78th (Seaforth) Highlanders on the right and the 81st Foot on the left. At the request of Colonel MacLeod, the 78th had retained its light and grenadier companies, and was thus a full regiment; a request no doubt granted because about 400 soldiers in the battalion companies were under age and all were new to action. The French formations had been difficult to see because their cavalry rode up and down the front intentionally raising a cloud of dust that created an effective screen. At about 0900 they withdrew to their right and as the dust settled Acland was able to see General Peyri's brigade advancing upon him. It consisted of the *42ème Légère* and a second line in support containing two battalions of the Polish Legion and the 1st Swiss Regiment commanded by a cousin of Lieutenant-Colonel Louis de Watteville, who led the Swiss regiment on the British side.

The forces slowly closed and the French delivered the first volley, which, like much of the French musketry that day, was aimed too high and did little harm. Well-aimed volleys shot in exchange by the longer line of 78th and 81st, with artillery support from Major Lemoine's three 6-pounder field-pieces, were sufficient to break the *42ème*, which retired before it could be reached with the bayonet. Peyri now brought up his Poles and Swiss. The former behaved badly, and fell back in disorder before the advance of the 81st. The 78th fared differently, for now occurred the second accident of the day.

The 'French Swiss' were dressed in reddish jackets, and the 78th were ordered by their officers to hold their fire, thinking that the 'British Swiss' had come up to the front from Oswald's reserve brigade behind. The 'French Swiss' were allowed to approach and fire a damaging volley which, if better aimed, might well have enabled them to breach the line. Once the Highlanders discovered in this unpleasant way that their 'friends' were their enemies, they fired a volley that stopped the Swiss short. They were about to follow up with

the bayonet, when Acland, realizing that they had got well beyond the 81st, ordered them to halt until the line straightened out.

General Reynier sought to take advantage of their exposed position by bringing in the *23ème Légère* from his right, but this unit was already too close to Cole's 2nd Brigade for such a move, and the best he could do was to hold his position with reformed troops and part of the horse artillery and cavalry. Reynier was now in the unfortunate position of a commander who, expecting a walk-over victory, found that his left and center had been utterly defeated. His only hope was to win an engagement on his right, and to this end he gathered all the reserves he could muster and sent them, with his cavalry and some artillery, to reinforce General Digonet's three battalions of the *23ème Légère* facing Cole.

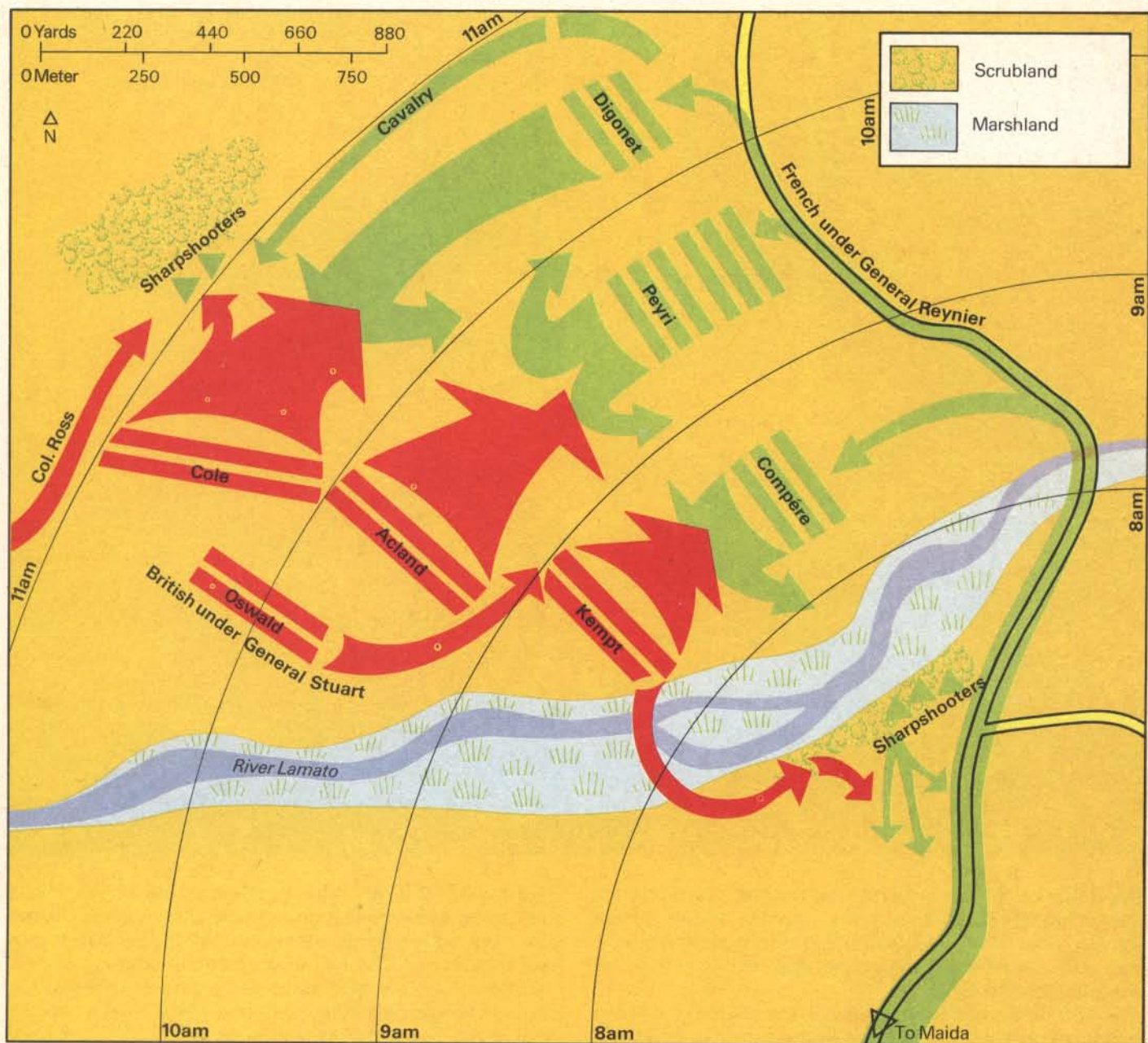
Cole's brigade was still completing its wheel at an oblique angle to Acland's front, delayed by constantly have to form square to confront cavalry. As Cole gradually moved up into line the opposition became stronger owing to the reinforcements Reynier was pushing across. The French artillery was doing more damage than hitherto; cavalry constantly threatened to charge; and the *23ème Légère*, with the reserves Reynier had thrown in, considerably outnumbered the brigade. Added to all this, French sharpshooters were dispersed in the thick cover on Cole's left, where they peppered the British line from the flank. Cole countered this nuisance by moving four companies of the 27th Regiment to their left front, facing the brushwood that concealed the *tirailleurs*. Stubble in which the rest of the 27th stood was set on fire by shells and the brigade shuffled uneasily. With ammunition getting scarce, the situation was the most critical of the morning.

Then came unexpected support. An officer rode up and told Lieutenant-Colonel Henry Bunbury, who was viewing the situation (as a staff officer) with some disquiet, that the 20th Foot's eight battalion companies had landed near the mouth of the Lamato and were now marching to the sound of the guns. Bunbury immediately galloped off to meet them and explained the position graphically to Lieutenant-Colonel Robert Ross. With instant appreciation of what was necessary, Ross brought his column on at the double, scattered the French sharpshooters, and formed line a little beyond Cole's left and at right angles to it. The 20th poured one volley into the French cavalry and massed infantry, following up this surprise attack with the bayonet to meet Cole's troops who had also charged. The right wing of the French was defeated and put to flight and that was the end of the day, or rather, morning, for it was scarcely noon.

Left in the hands of the partisans

Fewer than 5,000 British soldiers had run more than 7,000 French off the field, killing 700 and making more than 1,000 prisoner—and leaving many of the helpless remainder to the local partisans for unpleasant liquidation. The British losses were 45 killed and 282 wounded. In the direct infantry fighting 3,880 redcoats had defeated 6,900 French, for Oswald's 930-strong brigade was scarcely engaged.

Acland, Cole, Kempt and Oswald, each on that day fought his own battle, without orders and without support other than that which they rendered each other, with the exception of Bunbury's action in hastening up the 20th to Cole's support. A few years later in the Peninsular War, under Wellington, Cole and Oswald commanded divisions, and Kempt, as a major-general, a brigade of the Light Division. Acland commanded a brigade which held a key position in



A battle in four phases, from 0800 to noon. Kempt drove off the sharpshooters sniping at his flank and dealt with Compère's two battalions in one volley. Acland, facing 3-to-1 odds, got fire support from three 6pdr gun-teams and flank cover from Oswald which enabled him to rout five French battalions. Cole, hard-pressed by Reynier's able combination of guns, cavalry and infantry, had the decisive help of the 550-strong 20th Foot led by Col. R. Ross (right), 1814 captor of Washington.



Lancashire Fusilier Museum

the battle of Vimeiro, before being invalided home.

The staff officers had been unable to bring their respective brigade commanders any orders during the action, but once it was over it was essential that the C-in-C should decide whether to pursue the enemy or remain on the field. He ordered that there should be no pursuit. Stuart has been criticized for this decision, but it is difficult to see what a pursuit would have gained. He had no cavalry, and it is an axiom of war that a fleeing enemy, discarding equipment and even weapons, will always outrun an orderly body of troops of the same arm.

The moral effect of Maida was profound and far-reaching. British troops on the open field had soundly beaten the elite of the French infantry. This delighted the British public, who were in need of a land victory; and it gave hope to all the European countries over whom Napoleon held sway. The myth that French troops were invincible had spread widely: Maida dispelled that myth. The French were shaken, never again did they treat British troops with such high-handed contempt.

Kenneth Mansfield

WADI AKARIT

Tucker's brilliant desert tactics gave the chance of driving the Axis forces into the sea. What followed embittered him



Imperial War Museum

The Battle of the Wadi Akarit commenced with a masterpiece of military planning by the irascible Major General Francis Tucker. The total failure of his fellow commanders to take swift advantage of the golden opportunity created left him angry and bitter.

In April 1943, the Eighth Army in the course of its long, dogged pursuit of the Axis forces from Alamein to Enfidaville came up against the much-battered German-Italian army where the road to Sfax, in Tunisia, crosses the Wadi Akarit. With one flank anchored on a salt marsh, with two mountains as bastions and the other flank on the sea, the Wadi Akarit position was immensely strong. All the firm ground was blocked by minefields and an AT ditch which was partly man-made and partly the 'Wadi' itself. There was no way round. Such defenses had to be broken by direct assault by infantry and engineers. A passage had to be made for the British tanks. This was done in 14 hours of ferocious combat. Three Victoria Crosses were won within the space of a few hours and on a front of only six miles.

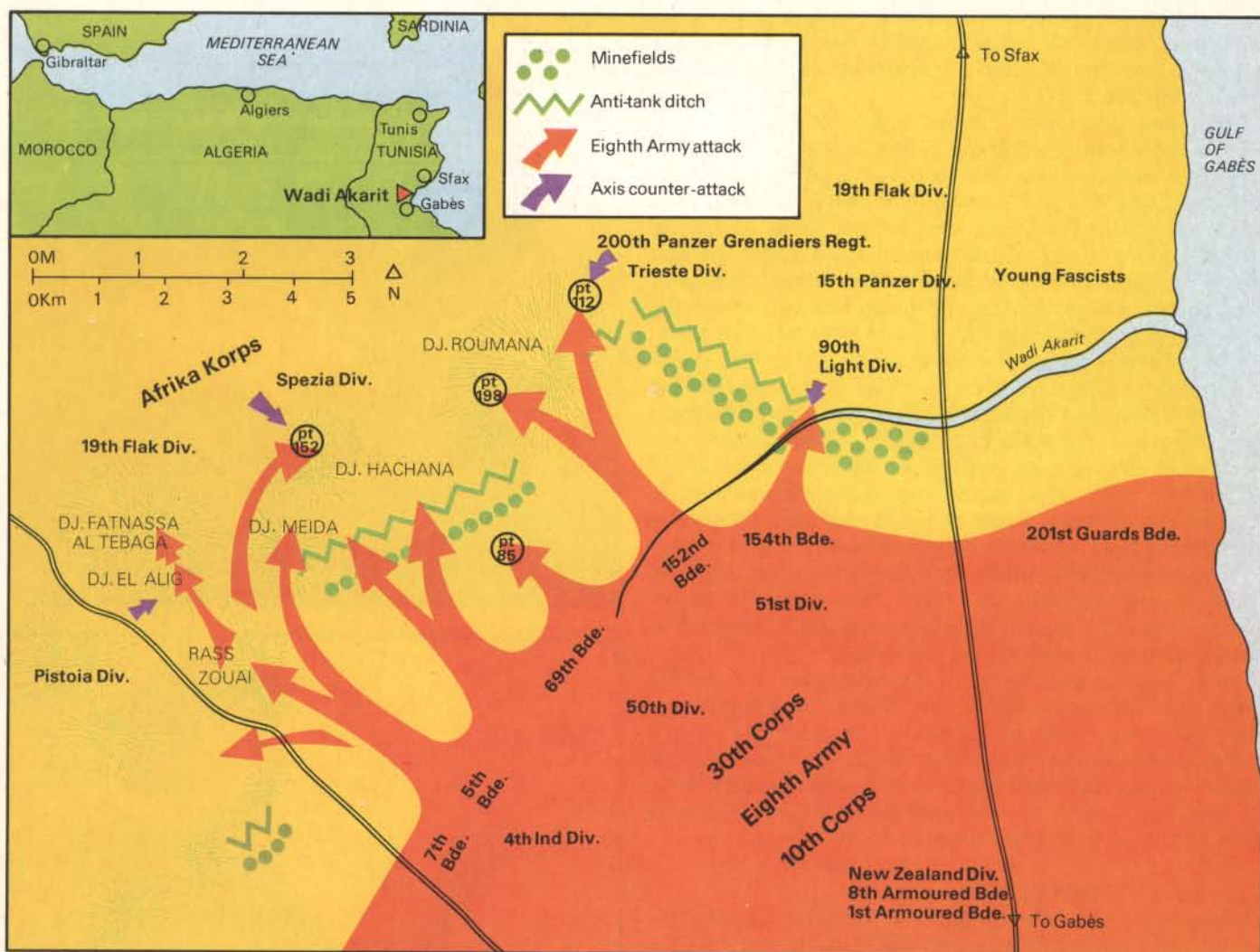
Rommel had left Africa by this time. The defending force, known as 'AOK 1', was commanded by the Italian general, Giovanni Messe, with von Bayerlein as chief of staff. Messe had first gained combat experience in Libya in 1911 and was one of Italy's most experienced soldiers. The British commander was no less than Montgomery, with his two favorite assistants, Leese and Horrocks, in detailed control. Some 300 tanks under Horrocks were poised to drive through the gaps torn by the infantry and wipe out AOK 1

once and for all. In the event the armored breakthrough was checked by a few shots from a couple of the dreaded 88mm guns. The whole battle stagnated and Messe escaped to fight another day. This failure was to prove costly.

Historically, the course of the battle remains a fascinating puzzle. Montgomery claimed it as a great victory. All the subsequent accounts, except one, ignore the complete failure to exploit the success won with so much self-sacrifice by the infantry. Even the usually candid official History evades the issue. But General Tucker, who commanded the 4th Indian Division and whose master-stroke created the opportunity for the tanks, has told his side of the story. It was a story of lost opportunity that made him indignant to his dying day.

What were the facts? The Axis position was immensely strong, but the German and Italian divisions were only at about a quarter of their proper strength, and short of supplies and ammunition. Fifteenth *Panzer* Division could only put 26 tanks in the field against the Eighth Army's 462.

Taking the terrain first, the Eighth Army planners ruled out a movement by the left flank because the rocky hills and the salt marsh made effective use of its mass of armor impossible. There were two obvious routes—by the main coast road to Sfax which crossed the Wadi Akarit, above which towered the Djebel (mountain) Roumana, or via the two-mile-wide plain between Roumana and the Djebel Fatnassa al Tebaga. This was a mountain massif of four square miles of peaks and ravines presenting a cliff-face to



△ To take the Wadi Akarit position, British forces had to cross a formidable AT ditch. Indecision at 8th Army HQ lost them the initial advantage created by the 4th Indian Division.

◁ A shell—probably from an '88—falls dangerously close to British Bren gunners giving covering fire to advancing infantry at Wadi Akarit, 6 April 1943.

the south-east which formed, in the view of both sides, an impregnable bastion on the (British) left of the main position.

Messe and Bayerlein had a nominal five divisions and spread their depleted and dispirited Italian battalions across the front—only two, from different divisions, being posted on Fatnassa—with what was left of the famous German 90th Light Division on the eastern anti-tank ditch, 15th *Panzer* Division being positioned in reserve. The Axis defense was miserably thin, and the commanders were anxious. At least, however, they had 19th Flak Division with 63 of the formidable 88mm dual-purpose guns. Of these, four covered the rear of Fatnassa, 10 the ditch between Fatnassa and Roumana and six the coast road. It was their reputation rather than their firepower which was to halt General Horrocks' armor.

Eighth Army, consisting of 44 battalions including machine-gun battalions, 462 tanks of all types and 400 guns, was organized in two corps. The 30th Corps under General Leese was mainly infantry, with three divisions, 4th 'Indian' (actually Indian-British-Gurkha), 51st Highland

(also mixed English-Scots, but the infantry were exclusively Highlanders) and 50th (Northumbrian), a Territorial division of the finest quality. The 50th Division at that moment was immobilized—its transport detached to help on the long supply line reaching back to Egypt. The 10th Corps, under General Horrocks, was predominantly armored. The troops available for the Akarit battle were from General Freyberg's New Zealand Division reinforced by the British 8th Armoured Brigade, and the 1st Armoured Division.

The Eighth Army plan was for 30 Corps to break in on the east of the enemy position and clear a road for the tanks of 10 Corps. In greater detail, the orders as given out on 3 April by General Leese—Montgomery taking hardly any part in the operation from beginning to end—was for 4th Indian to attack the central ditch between Meida and Roumana and force a bridgehead across it, and for 51st Division to capture Roumana with one brigade and to establish a bridgehead across the Wadi Akarit with another, all assisted by a tremendous artillery bombardment, during which the gunners were to fire 82,000 shells. This was the technique used so effectively at Alamein.

When this was completed General Leese was to launch the New Zealanders into the gaps the engineers would make through the mines and over the ditch. Once the armor was fairly in the open and the pursuit under way, General Horrocks would take over conduct of the battle.

It was all very straightforward, except the switch in command. This would require perfect timing, perfect communica-

tions, as well as perfect understanding between the officers concerned. Also, the firmest control would have to be exercised from the top over the syndicate of distinguished generals involved.

The 'rogue elephant' in this syndicate was Major General Francis Tucker commanding 4th Indian Division. He was one of the most imaginative tacticians produced by the British Army in World War II. An ex-Gurkha officer, highly intelligent and artistic (he wrote and painted well), a radical thinker, he was totally unable to suffer fools gladly and had a natural irritability made worse by severe arthritis. Temperament and his Indian background made him very much the 'odd man out' in Montgomery's personally selected team.

When Tucker's Division was brought up to the Akarit position, the tangled mass of Fatnassa, and especially the peaks of Souai, and Meida against whose eastern buttress rested the left side of the anti-tank ditch, caught Tucker's eye. Mountains, like jungles, are an obstacle to mechanized armies, but offer good cover and secret approaches to experienced infantry. Tucker guessed that this apparently impregnable area would be lightly defended and that there were routes up and, better still, through it. He sent his patrols out immediately on arrival. They proved both his hunches correct. Armed with this knowledge he went off to receive General Leese's orders on 3 April.

When Tucker heard the part he was to play in the 30th Corps plan he was horrified. He strongly disapproved of these out-dated 1918 tactics. Also, he saw correctly that if anything went wrong and he was held up he could be stuck out on the plain between Meida and Roumana under direct fire from the heights to the right and left. This is exactly what happened to the two other divisions.

Audacious change of plan

Immediately after the conference was over he asked to see General Leese privately and audaciously suggested a change of plan. His proposed place in the plan, he argued, would be taken by a brigade brought up from 50th Division, and the 30th Corps attack could start as planned early in the morning of 6 April. Would Leese permit him to assault the Fatnassa massif in total silence at sundown on 5 April, using his own methods? He would guarantee to capture the entire feature by dawn, securing 50th Division's left from interference. Leese unhesitatingly agreed and his efficient staff mobilized the 69th Infantry Brigade to take Tucker's place in the center. It is doubtful, however, whether Leese fully realized—or indeed if it was fully or candidly explained to him—that Tucker intended much more than a mere subsidiary operation.

His plan was a gamble. 'Near the border-line of imbecility and impossibility' was how he himself described it after its brilliant success. His real philosophy was expressed to one of his brigadiers as they planned the assault. Quoting Adam Lindsay Gordon he said—'Look before you leap but if you *mean* leaping, don't look long. For the weakest fence will then grow stiff. And the stiffest doubly strong.'

Five of his battalions were detailed to file into the heart of the massif. Each was to be in single-file and complete silence was to be observed. Not a shot was to be fired until Tucker gave the word. The sixth was to escort the engineers and their plant, a regiment of artillery and all the artillery reconnaissance parties via the plain to a point at the foot of Djebel Meida. But before they got there, the position was to be captured by the 1st Royal Sussex, or else the operation would be impossible. Tucker was planning something more



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Malcolm McGregor

◁ Many of the fighting men in Taker's 4th Indian Division were Gurkhas, skilled and resourceful soldiers in combat.

◁ ▽ A Gurkha, 4th Indian Division, in battle-dress bearing his Divisional sign. An effective and fearsome weapon in combat, the kukri is backed by a .303 No. 4 Mk. 1 Lee Enfield. The man's smile reflects the happy nature of his race. But that smile is still there when he sweeps upon the enemy, the terrible razor-edged kukri flashing.

▷ A 6pdr AT gun in action. Gurkhas of the 4th Indian Division using armor piercing shells.



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ambitious than merely clearing the heights on the left to allow the advance of the other troops in the plain below. He intended to break through completely with his own division. His engineers were to drive a route fit for tanks and other vehicles through the mines and over the ditch.

This involved pushing his advance right up to the north-eastern summits of the spurs at Point 152 which curled round to command the enemy rear. Confident that this could be pulled off, he planned to bring up all his guns next morning for close support to positions just short of the ditch.

The Eighth Army staff either did not grasp this or dismissed it as impossible. Without consulting Taker they ordered 1st Armoured Division to make a demonstration as if they were expecting a breakthrough on the left, just where 4th Indian's attack was to be launched, to divert Messe's attention from the right flank! As a result, from the beginning of their attack 4th Indian Division was greeted by heavy defensive fire by the alarmed enemy who also dropped or fired illuminating flares all night long. It is obvious why Taker was even more furious than usual.

The Gurkha and the HQ 7 Brigade radio-sets were hit, as was the HQ of the Royal Sussex. All contact was lost with the forward companies and the gallant Brigadier Lovett was wounded for the first of three times that night. The 1st/4th Essex conveying the long column of gunner and sapper vehicles was held up and lost radio contact.

Taker watched his assault troops filing silently forward in the dark up to their start points and returned to his command post to listen with such patience as he—and his staff—could summon to the shattering echoes of enemy shell-fire in the valleys far above, punctuated by the shrill calls of the Gurkha riflemen to each other as they hunted in the dark and the occasional rattle of small arms fire and the bang of grenades.

The main attack by the two British divisions began at 0430 on 6 April with what Messe called 'an apocalyptic hurricane of fire' from the Royal Artillery. Cooke Ellis' 69th Brigade of 50th Division (6th and 7th Green Howards and 5th East Yorks) went first for Point 85 which guarded the approach to their intended crossing and then for the ditch itself. The 152nd Highland Brigade (2nd and 5th Seaforth and 5th

Camerons, reinforced by 5th Black Watch) were to clear the top of Roumana. At the same time, 154th Highland Brigade (1st and 7th Black Watch, 7th Argyll and Sutherland Highlanders) were to force a passage across the ditch to the left of the road to Sfax. Both divisions were then to push out to form a bridgehead large enough for the tanks of 10th Corps to use as a base. Both 69th and 154th Brigades were strongly reinforced with artillery observer parties, AT guns, tanks and the Royal Engineers, whose job it was to sweep a path through the mines and make a crossing for tanks across the ditch.

This was the sort of operation in which the Eighth Army excelled. The whole operation of bringing up the brigades to their startlines in the dark, assembling the engineers, tanks and AT artillery, laying the communications, co-ordinating the complex artillery fire-plans—the Highlanders asked for five separate barrages, all at different times and moving in different directions—and so on, was a model of staff work. Everything that forethought and attention to detail could provide was provided. Nothing, however seemingly trivial, was left to chance. The rest was up to the British infantry, who faced a day of what was to be some of the hardest fighting in gruelling conditions they had ever experienced.

There were four main keys to the Wadi Akarit position. Point 152—El Hachana, Point 85 (the objective of 6th Green Howards) covering the crossing place chosen by 50th Division over the AT ditch, the western summit of Roumana, Point 198 and the eastern, Point 112, overlooking the Sfax road. If these fell Messe's position became untenable.

The fate Taker feared overtook the Northumbrians. They took Point 85, but were held up by murderous fire as the barrage failed to quell the Italian Bersaglieri battalion holding the ditch. They were trapped out in the open, while General Nicholson, their commander, and Brigadier Cooke-Ellis, went up to Point 85 to reorganize and restart their attack.

While all this was happening, Private Anderson, a stretcher bearer of the 5th East Yorks, who were pinned in the open, made three separate trips under enemy machine-gun fire to bring back wounded comrades. He was killed on



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the fourth journey and was awarded the Victoria Cross posthumously.

On Roumana, a fierce battle took place. The Seaforth and the Camerons reached the crest. The Camerons under their giant Adjutant McHardy, who took command when the leading officers were killed, captured the vital Point 112, but their opponents were the *Panzer Grenadiers* of 200 Regiment. These were the toughest and most experienced infantry on the Axis side. Their doctrine was to hold ground by counter-attack. They retook Point 112, and held it against repeated attacks led personally by the commanding officer of the Camerons, Lieutenant Colonel Horne. The Seaforths hung on grimly to Point 198 but the company was reduced to a dozen men. For the rest of the day the commanding crest was shared by both sides and the fighting broke up into bitter clashes between little knots of men or solitary champions like Private Bridges, who single-handed held the left of his battalion position with his Bren gun, or Company Sergeant Major Macrae of the Camerons, who led three bayonet attacks and killed nine opponents before he was killed himself.

On the plain to the right of Point 112 the 154th Highland Brigade successfully crossed and bridged the Wadi and established a bridgehead with tanks and AT guns. But they soon came under heavy fire from Roumana. The Argylls were strongly counter-attacked by tanks and the formidable infantry of 90 Light Division. The battle there was dominated by Lieutenant Colonel Lorne Campbell, commanding the battalion, whose 'display of valour and utter disregard for personal safety which could not have been excelled,' earned him the Victoria Cross. When darkness fell he was wounded. Still on his feet, he directed the fight under close-range fire, moving to each threatened point in turn and cheering his men on in a close-quarter fight finally decided with the grenade and bayonet. Perhaps fewer than a thousand Highlanders and a dwindling handful of tanks fought all day to retain this vital bridgehead. And while this was happening no fewer than 12 battalions of British and New Zealand infantry sat idle in their vehicles.

By mid-morning, the battle on the right and center was



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△△ *Men of the 8th Army attacking under fire during the assault on Wadi Akarit. During the battle, infantry were easy targets for Axis artillery — especially the '88' used against ground forces.*

△ *One of the defensive techniques employed by Gen. Tuger during the battle for Wadi Akarit was to create a smoke-screen in front of the advancing infantry. Here, Gurkha troops emerge from a wall of smoke as they head for an enemy position.*

△▷ *Wadi Akarit was heavily defended by mines. Royal Engineers lay a taped path through one of the minefields as the infantry follow — 7 April 1943.*

half-won. The East Yorks and 7th Green Howards had fought their way up to the ditch and over it, and some of their supporting tanks from the City of London Yeomanry had moved across. The Highlanders were hard-pressed but the Indians were deep in the Axis position. Leese, who had the responsibility of ordering the armor forward, felt that the bridgeheads were as yet too fragile and did not care to risk having the heads of the tank columns shot away by 88mm guns. For the moment he hesitated.



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What had happened to 5th and 7th Brigades of Tucker's division? The Gurkha patrols had discovered a route up the cliffs to Zouai—held by 1/36 Battalion of Pistoia Division. It was no more than what rock climbers call a 'chimney'. The position was strongly held, and the post also dominated the long rocky re-entrant which was the route 1st Royal Sussex were to take to Meida, an essential intermediate objective, as it secured 50th Division's left flank and covered the site of 4th Indian Division's proposed crossing. It was the task of Subedar (Gurkha captain) Lalbahadur Thapa to lead a platoon of 'D' Company 1st/2nd Gurkha Rifles up the chimney and clear the route to the summit of Zouai. Every man bar two was hit as they labored their way up foot by foot.

Subedar Lalbahadur Thapa reached the first enemy sangar without challenge. His section cut down its garrison with kukri. Immediately every post along the twisty pathway opened fire. Without pause the intrepid Subedar, with no room to maneuver, dashed forward at the head of his men through a sleet of machine-gun fire, grenades and mortar bombs. He leapt inside a machine-gun nest and killed four gunners single-handed, two with the knife and two with pistol. Man after man of his sections were stricken until only two were left. Rushing on, he clambered up the last few yards of the defile through which the pathway snaked over the crest of the escarpment. He flung himself single-handed on the garrison of the last sangar covering the pathway, striking two enemies dead with his kukri. This terrible foe was too much; the remainder of the detachment fled with wild screams for safety. The Subedar—'Lalbahadur' means literally 'Red Hero'—was awarded the Victoria Cross.

The night wore on into the small hours, with companies fighting their own little battles, while 1st/9th Gurkha Rifles made for Dj Alig and Fatnassa Tebaga to secure them against counter-attack and the Rajputana Rifles trudged doggedly towards Hachana. They were caught in the open and exposed to fire by the flares dropped by Axis aircraft. The flares did, however, help them to find their way, so they were not completely unwelcome.

Tucker and his staff sat biting their nails until 0130, and

then at last were rewarded by the glorious sight of lights floating over Zouai—the agreed signal for success. The 1st/2nd Gurkhas were home. An hour later, Colonel Firth, of the Royal Sussex, came through asking for artillery fire on Meida. Tucker agreed. By then all surprise had been lost, the enemy was roused and the time had come to free the guns from their silence. From then on, Dimoline played his giant orchestra of death, bringing down crash after crash of concentrated fire as demanded.

By 0430 the news came in that Firth was on Meida, and later, and even better, that he had captured an AT battery, 300 prisoners and 600 yards of the tank ditch and was helping the East Yorks of 50th Division forward. After a personal reconnaissance Firth also reported that Point 152 was not held and the thrusting Rajputana Rifles were told to press on to it. This they did, taking many prisoners on the way and boldly sending their patrols out on to the plain. From Point 152 and Hachana they could see the back of Roumana only two miles away.

Noble, commanding the Essex battalion had, like the East Yorks through whose area he had been moving, been badly held up. He was planning to attack the ditch on his own initiative when he was finally contacted. His charges were safely delivered to the foot of Meida, where the sappers began work, and he was given orders to join the Royal Sussex consolidating on Meida.

By 0830 4th Indian, with every soldier committed, had cleared and taken the entire Fatnassa massif and were 1,000 yards behind, and overlooking Messe's defenses.

For the Axis, the situation was grim. Von Arnim, overall commander in Africa, was on a difficult and worsening position. He was fighting with his left arm thrust out in front to hold off Montgomery and his right sideways in an attempt to keep the United States 2nd Corps away from el Guettar and AOK 1's line of retreat. Now Messe's position was breached, his tanks were being obliterated by the RAF, who had full control of the sky. Six battalions and many guns had been lost and AOK 1 faced total collapse if the mass of waiting British armor was allowed to sweep through the gaps in its front. On 6 April, Arnim, Messe and Bayerlein

conferred anxiously. Their last reserves counter-attacked the Gurkhas on Fatnassa and the Argylls in their shallow, exposed bridgehead on the coastal plain. It was decided to pull out as soon as it was dark.

The detailed plans for the advance of 10th Corps were highly contingent. A battle group made up of a minefield task of engineers was to make up the total number of crossings to seven. Then, the 8th Armoured Brigade, followed by a regiment of artillery and a brigade of New Zealand infantry, were to lead off under General Freyberg. When he was to start and whether he was to go left or right of Roumana was to depend on how things turned out. The 1st Armoured Division was to be prepared to follow.

There was a lot of brass to be consulted—perhaps too many. Montgomery was out of sight as well as out of touch. The two Corps Commanders, the strong-minded Freyberg, and the commanders of the infantry divisions who had broken through and whose first-hand impressions were vital to any decision. They all had to be asked their views.

At 0735 30th Corps learned from 4th Indian Division that Zouai, Alig and Meida were taken and at 0920 that there was a usable crossing over the ditch at the Meida end. Around 0935 the 5th East Yorks crossed over to meet up with the Indians. Meanwhile, the Green Howards covered the Royal Engineers while they made another crossing at the Roumana end of the ditch. At 1045 Leese ordered Freyberg to start moving through the gaps made between Meida and Roumana, and at 1100, before the movement had started, told him to revert to command of 10th Corps. General Horrocks and Freyberg conferred at 1200. By 1330, the tanks of the Staffordshire Yeomanry were passing through the Roumana gap and the 3rd Royal Tank Regiment through the Meida gap. A battery of 88mm guns behind the western slopes of Roumana then crashed into life from a fortified position and engaged the Staffordshire Yeomanry, who were forced to a halt. The left-hand column filed slowly through the gap, beginning at 1300. By 1900 they were only a mile farther on, and still behind the forward Indian infantry. The total British tank losses for the whole battle, which includes the Valentines of 40th RTR who were all picked off in the 154 Brigade bridgehead, were 32. No attempt was made to attack or neutralize the blocking battery or batteries. This is particularly surprising because the RAF flew no fewer than 830 sorties that day at *other* targets by request of the Eighth Army.

Montgomery himself signalled Alexander at 1200 that 'all main objectives had been captured according to plan. 10th Corps now in movement to pass through hole blown by 30 Corps'. At about 1700 the Eighth Army staff ordered a fresh plan to get the armored units past the Axis 88s. This was for the following morning, 7 April, when every gun that could range would be turned on to the dead ground behind Roumana and the armor would resume its advance supported by close air support on its front and flanks. This, according to 4th Indian Division sources, was greeted by them with scorn. There was nothing holding the armor up, they claimed. There was certainly nothing by dawn on 7 April.

What, then, went wrong? Or, indeed, did anything go wrong? It was argued 30 years later—in the pages of the *Army Quarterly*—that at that stage of the conflict it was unnecessary to force the Eighth Army into costly offensives as the Axis in Africa was doomed anyway. That falls down on the fact that the infantry were committed to an exceptionally bloody action (1,289 casualties, mostly in 51st

Division) and were to be thrown into another at Enfidaville shortly afterwards.

The first thing to consider is the highly vexed question of tanks versus the 88mm guns. The 88 was an AA weapon with very good optical sights for AT work and a high muzzle velocity. With AP shot it could penetrate 103mm of armor at 1,000 yards and 86mm at 2,000—about the distance between Roumana and Meida. Firing sideways from behind cover, it was difficult to pinpoint and knock out. All the same, it was very vulnerable to HE shells from tank guns, MG fire, infantry and artillery fire. Its crews were brave, but only human. One of the things the British armor had not learned to do by April 1943 was to adapt its tactics to fighting in mixed groups using guns, or infantry or tanks, or all in combination as required.

The armored corps as a whole was deeply under the influence of the ideas of Liddell Hart and Fuller, which was that their role was one of maneuver in the open. There were, in their opinion, two types of tank. One was for the close support of the infantry and were virtually self-propelled guns. They were organized in 'Army Tank Brigades'. It was their Valentines that shared the battle with the Argylls at the bridgehead. To force armored brigades into such close fighting where all depended on fire-power and nothing on maneuver was, the armored cavalrymen felt, only to blunt the flashing sabres of the pursuit.

This is what Montgomery had made them do at Alamein. It was not the self-sacrifice they objected to but what they considered to be a misuse of a vital weapon. To drive on to a line of 88mm guns was suicide and, perversely, they objected to fighting in mixed groups with gunners and infantry, as they felt it cramped their style. It must have been for these reasons that 8th Armoured Brigade advanced with so little enthusiasm into the rolling ridges beyond the crossings in the tank ditch—so full of natural ambushes for the deadly German 88s.

Often in battle what is patently obvious to one observer is unknown to another only half a mile away. At 1200 on the 6 April there was no contact between the weary soldiers of the 4th Indian Division on the heights who had a grandstand view of the armored advance and the tanks of 8th Armoured Brigade. The way that communications were organized was that information went from divisional HQ to HQ 30th Corps, who re-transmitted it to HQ the New Zealand Division who in turn had to send it to HQ of the Armoured Brigade after which it had to filter down to the regiments and squadrons.

Psychologically, there is always resistance from leading junior commanders to exhortations from the rear to 'press on as there is no enemy in front'. The only way is for a senior commander to go forward and lead personally.

Thirty years have gone by since this battle which have openly deepened the obscurity which surrounds it closing hours. All that can be said is that the Eighth Army command control system was not at its best. Signal communications in those days were crude and subject to interference of every kind.

The next morning, Eighth Army resumed its advance across an empty plain, and joined up with the Americans. The Axis position in Africa only awaited the final blow. As for Tucker and the 4th Indian Division, this startling demonstration of how well they could fight was to prove fatal. They were never to be ignored again, and the grim task of assaulting Cassino and Hangmans Hill, where they were to be decimated, was awaiting them in Italy.

Shelford Bidwell



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△ The 8th Army attack on Wadi Akarit begins. Pte. E. Whale, of West London, crawls from cover, bayonet fixed.

▷ 13 May 1943. General Montgomery in conversation with the defeated Marshal Messe. In the center is General Freyberg, who commanded the New Zealand Division,

▽ Under the watchful eye of a Sherman tank, newly captured Axis troops prepare to go into POW camps. The Kairouan Plain, April 1943.



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HURRICANE, SPITFIRE

France fell, German bombers massed to obliterate England. They were beaten back by bravery—and two great aircraft

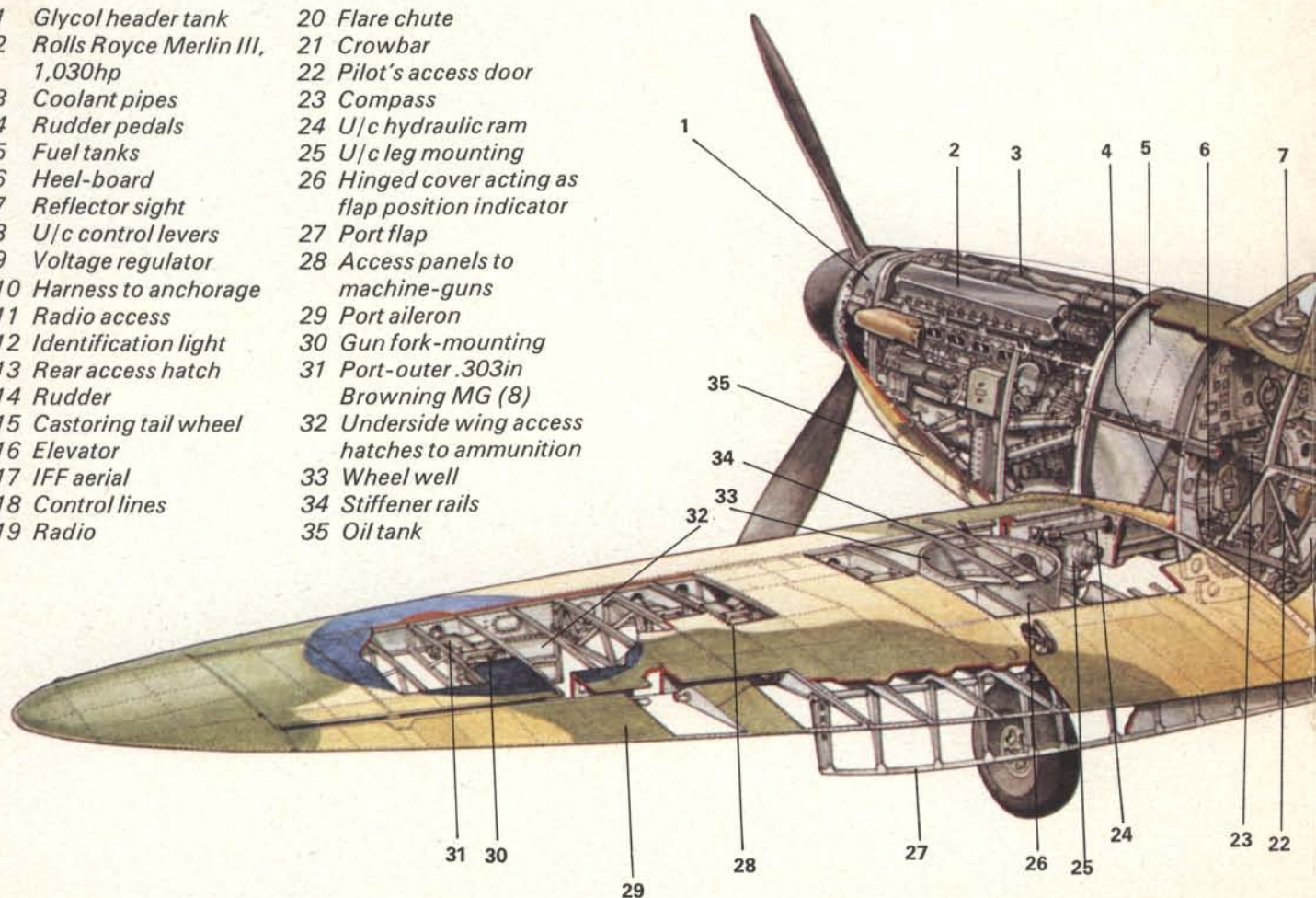
'Every part of the German aircraft bore traces of devastating machine-gun fire; even the two metal propellers were drilled with holes.' The plane was a twin-engined Heinkel 111 bomber which fell near Dalkeith, Scotland, on 28 October 1939. It was the Spitfire's third kill of World War II and the first German aircraft to come down on Britain since 1918. From the beginning of that month until May 1940 the fighter's Hawker stablemate scored spectacular successes over France, '27 enemy machines were tackled by a dozen British Hurricanes; the Germans were shot down so fast that a trail of blazing enemy aircraft lighted the sky from Roulers to the coast.' And the Battle of Britain which would immortalize the two fighter aircraft was yet to begin.

Hurricane and Spitfire in that order of precedence. Some 35 years after the Battle of Britain in the summer of 1940, history's understandable glamorising of the Spitfire has

tended to nourish a popular misconception that the slimline Vickers-Supermarine machine outshone and outnumbered its humpbacked companion, the Hawker Hurricane. The Spitfire's role in the Battle of Britain is recalled in classic terms whereas that of the more ubiquitous Hurricane is regarded as workaday. Yet the total numbers engaged during the battle were 1,326 Hurricanes and 957 Spitfires. Hurricanes shot down more (i.e. about 900) enemy aircraft than all other ground and air defenses combined. German ace Adolf Galland unwittingly put the seal on posterity's assessment when he enraged *Reichsmarschall* Hermann Goering, with the request: 'Give me one wing of Spitfires and we'll finish the job.'

Yet, following transfer from Spitfires in early September 1940, to command Hurricanes, Squadron Leader Robert Stanford Tuck, Galland's renowned wartime adversary,

- | | |
|-----------------------------------|---|
| 1 Glycol header tank | 20 Flare chute |
| 2 Rolls Royce Merlin III, 1,030hp | 21 Crowbar |
| 3 Coolant pipes | 22 Pilot's access door |
| 4 Rudder pedals | 23 Compass |
| 5 Fuel tanks | 24 U/c hydraulic ram |
| 6 Heel-board | 25 U/c leg mounting |
| 7 Reflector sight | 26 Hinged cover acting as flap position indicator |
| 8 U/c control levers | 27 Port flap |
| 9 Voltage regulator | 28 Access panels to machine-guns |
| 10 Harness to anchorage | 29 Port aileron |
| 11 Radio access | 30 Gun fork-mounting |
| 12 Identification light | 31 Port-outer .303in Browning MG (8) |
| 13 Rear access hatch | 32 Underside wing access hatches to ammunition |
| 14 Rudder | 33 Wheel well |
| 15 Castoring tail wheel | 34 Stiffener rails |
| 16 Elevator | 35 Oil tank |
| 17 IFF aerial | |
| 18 Control lines | |
| 19 Radio | |



COMPARISON TABLE

	Hurricane Mk 1	Spitfire Mk 1
Engine	Rolls Royce Merlin III 1,030hp at 16,250ft	Rolls Royce Merlin III 1,030hp at take-off
Armament	8 x .303 Browning MGs	8 x .303 Browning MGs
Ammunition	334 rounds per gun	300 rounds per gun
Wing span	40ft	36ft 10in
Length	31ft 6in	29ft 11in
Height	13ft 1½in	12ft 3in
Wing area	258sq ft	242sq ft
Weight empty	4,980lb	4,810lb
Weight loaded	6,447lb	6,200lb
Cruising speed	230mph	280mph
Maximum speed	328mph at 16,250ft	367mph at 19,000ft
Maximum range	505 miles	575 miles
Service ceiling	34,200ft	34,000ft
Production	3,954 aircraft	1,566 aircraft

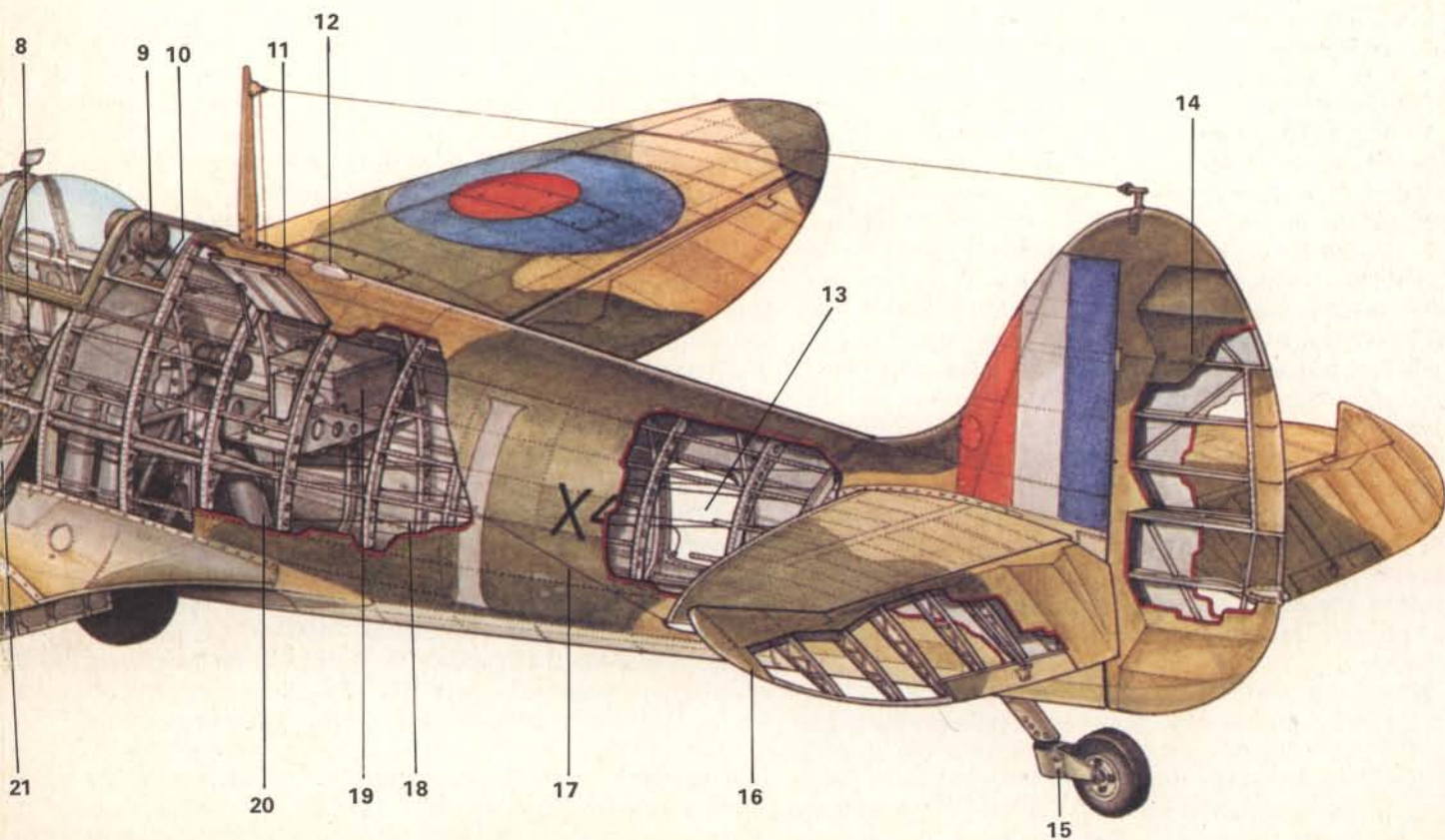
The quotation on this page is from 'The Hurricane Story' by Paul Gallico and is reproduced by kind permission of Michael Joseph Ltd. and Harold Ober Associates Inc.

eulogised the Hurricane: 'She was solid and it was obvious she'd take a devil of a lot of punishment. She was steady as a rock, and was a wonderful gun platform. The visibility was far better than in the Spit. The undercarriage was stronger and wider and that made landing a lot easier. Somehow she gave the pilot terrific confidence. You felt entirely safe in this plane.'

But in retrospect, the separate and haphazard origins of Hurricane and Spitfire as the weapon-saviours of the Battle of Britain would defy belief were it not for the traditional, almost statutory, muddle of Britain's defense preparations. Well into the 1930s the Air Ministry, remaining faithful to a 1912 Committee report which decided that monoplanes were unsafe, retained an official preference for biplanes and continued to place contracts for them as first line fighters as late as 1936. Individual Air Marshals, notably Sir Hugh Dowding, destined to head RAF Fighter Command during the Battle of Britain, gave personal encouragement to aircraft manufacturers. But neither fighter would have been available in sufficient numbers in 1940 but for private enterprise, the single-minded persistence of two great aircraft designers, and a fairy godmother who provided a vital £50,000.

Both aircraft originated in the Schneider Trophy international seaplane contests of the 1920s and 1930s. These events attracted the Supermarine and Hawker companies and their celebrated designers, Reginald J. Mitchell and Sydney Camm, each of whom had concluded, ahead of the government, that monoplanes would be the fighters of the

SPITFIRE MK 1. No. 19 Squadron, Duxford, August 1940





Air-vice Marshal Norman Hoad/R.A.F. Museum Hendon

future. Aircraft designed by Mitchell for Supermarine (the company was taken over by Vickers in 1928) won the trophy in 1927 and 1929. The prospect of a hat-trick in 1931 persuaded the government to sanction and assist a British entry, but only after it had been shamed into permitting entry by an offer of £50,000 from Lady Houston, a wealthy eccentric patron of British aviation during the depression years. The result was a 340mph victory for Mitchell's S6B.

Even then, success did not lead immediately to business although the Air Ministry kept abreast of subsequent monoplane development at Supermarine and Hawker. Orders for prototype monoplanes which became Spitfire and Hurricane were not placed until December 1934 and February 1935, after tenders had been accepted from each company specifying the fastest possible single-seater plane with a practical landing speed.

For Reginald Mitchell, the building of the first Spitfire became a personal race against time. He returned from holiday in Germany convinced of the certainty of war and knowing that he was dying of cancer. He died in June 1937 shortly before the first production Spitfire was airborne. Sydney Camm survived Mitchell to see the Hurricane enter RAF service in December 1937, with No. 111 Squadron. This was well ahead of Spitfire, not operational until June 1938. No. 19 Squadron was the first to be re-equipped with the type in August and September. Very gradually, Hurricanes and Spitfires began to replace the RAF's Gauntlet and Gladiator biplanes to the great relief of the Air Ministry, which at last conceded that the biplane had had its day as a first-line fighter aircraft. By the time of the Munich crisis in September 1938, a year before World War II, only five of the RAF's 29 fighter squadrons flew monoplanes—all Hurricanes. At the outbreak of war there were 18 Hurricane squadrons and nearly 500 aircraft. In that year nine Spitfire squadrons had been formed, with 400 of the new fighters operational.

Although the Battle of Britain did not start until 10 July 1940, the relative roles of Hurricane and Spitfire in the battle were partly predetermined by events during the Fall of France and the Dunkirk evacuation in May and June 1940.

Appalled by RAF fighter losses in France—37 Hurricanes in the first week, mounting to 250 between 8 May and 18 June—Air Chief Marshal Sir Hugh Dowding, C-in-C,

Fighter Command, obtained permission to address Prime Minister Winston Churchill and the War Cabinet on the imperative need to keep a reserve of Hurricanes and Spitfires. On 15 May he told the Cabinet: 'If the present rate of wastage continues for another fortnight we shall not have a single Hurricane left in France or in this country'. The Air Chief Marshal did not press the matter of Spitfires. They were so scarce that, apart from employing them to help cover the Dunkirk evacuation, they were kept back. Four days after Dowding's appeal Churchill stopped fighter squadrons crossing the Channel to France.

It was against this background that RAF Fighter Command awaited the expected aerial onslaught. The Command was divided into four groups, Nos. 10, 11, 12 and 13. No. 11 Group, operating from airfields in SE England and headed by Air Vice-Marshal Keith Park, a New Zealand Scot, would be in the front line and responsible for defending London, its own airfields, the radar chain and the coast along which any invasion attempt could be expected. Park had an average of 19 squadrons comprising about 200 serviceable fighters. Thirteen of his squadrons were equipped with Hurricanes, only six with Spitfires. Dowding's resources, including No. 11 Group, were 25 squadrons of Hurricanes and 20 of Spitfires. Dowding knew that after including six Blenheim squadrons, mainly equipped for experimental night fighting, and two squadrons of Boulton Paul Defiants, he could muster a total of some 700 fighters of varying performance. Across the Channel and North Sea, Germany had mustered *Luftflotten* 2, 3 and 5. They comprised 900 Me 109 single-seat fighters, 300 twin-engine Me 110 fighters, 300 Ju 87 'Stuka' dive bombers and a thousand Dornier 17, Heinkel 111 and Ju 88 medium bombers.

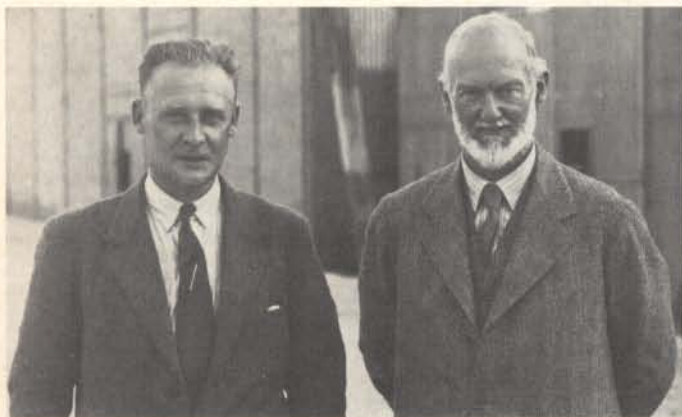
The initial action on the first day of the battle was typical of Britain's plight. Shortly before 1400 on 10 July six Hurricanes of No. 32 Squadron from Biggin Hill, Kent, were approaching their patrol line 10,000ft above a convoy off Dover. The Hurricane pilots saw 'waves of enemy bombers in boxes of six', reported Acting Sub-Lieutenant G. G. R. Bulmer RN, on loan from the Fleet Air Arm because of the RAF's shortage of operationally trained fighter pilots.

The Hurricanes divided into two sections, one section of three aircraft diving into a hundred of the enemy. A further

◁ *Spitfires attack He 111s from behind. The slower German bombers, with no rear protection, were easy prey for the RAF's fast fighters.*

▷ *One of the Spitfire's predecessors, the striking Supermarine S6, winner of the 1929 Schneider Trophy, which raised the world airspeed record to over 400mph in the '30s.*

▽ *The team whose Vickers airframe and Rolls-Royce engine combination led to the brilliant combat performance of the Spitfire. R. J. Mitchell the designer (left) and F. H. Royce (right).*



12 Hurricanes and eight Spitfires from four other squadrons were hastening to the scene. As the Spitfires arrived, 100 enemy bombers and fighters had spiralled themselves into three layers, forming a cylinder over the convoy. On top were Me 109s, in the middle, Me 110s and below them Do 17 bombers. Climbing to 13,000ft, an advantage of 1,000ft over the Me 109s, the Spitfires dived into the cylinder. By sea level most were out of ammunition. Four Hurricanes were lost as against four enemy fighters, but only one ship was sunk.

What, then, were the respective qualities of the standard Hurricane and Spitfire in July 1940 and what were the measures taken to improve their performance?

Today, museum pieces alongside their World War I predecessors, each aircraft appears small and fragile. But, in 1940, to glimpse Hurricanes and Spitfires climbing for fighting altitude over the hopfields of Kent was to gain much-needed reassurance. In fact, the comfort was a trifle false because the performances were not up to the Air Ministry's 335mph for the Hurricane Mk I and 366mph for the Spitfire Mk I. Dowding himself was to correct the speed illusion in his Battle of Britain dispatch: 'I carried out a number of trials to obtain the absolute comparative speeds of Hurricanes and Spitfires at optimum heights. Naturally the speeds of individual aircraft varied slightly, but the average speed of six Hurricanes came out at about 305mph.' Thus, while the Spitfire's 355mph at 19,000ft was equal to the Me 109, the Hurricane's speed was no match for the

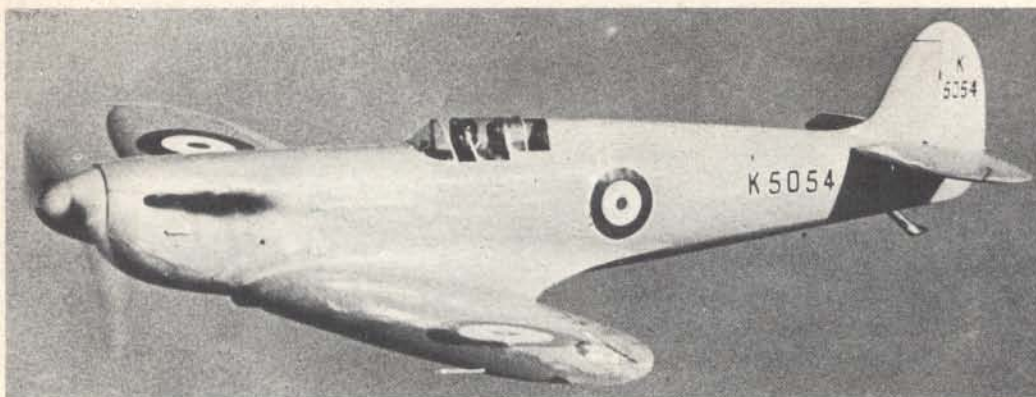
German fighter, taking either Dowding's figure or a subsequent official figure of 316mph at 17,500ft. Comparative cruising speeds for the two planes were 230mph and 280mph as against the Me 109E's 298mph. So, Fighter Command with its preponderance of Hurricanes, remained at an overall speed disadvantage throughout the battle. Churchill summed up the fighters: 'Germans were faster, with a better rate of climb; ours more manoeuvrable, better armed.'

The comparative rates of climb of Hurricane and Spitfire in this period were 6.3 minutes and 6.2 minutes to 15,000ft obtained from the same Rolls-Royce Merlin III 12-cylinder 1,030 hp engine. The Me 109 could climb another 1,500ft in the same time. The next 5,000ft took the Hurricane 2.3 minutes and the Spitfire 3.2 minutes. The Hurricane's greater wing-span and a wing-loading of 24lb per sq.ft as against the Spitfire's 26lb not only accounted for its better rate of climb but enabled it to carry heavier loads and gave an ability to turn inside an Me 109, which a Spitfire could also do.

The armament to which Churchill alluded was eight Browning .303in machine-guns which Hurricane and Spitfire carried, four in each wing and set to fire forward outside the airscrew disc. This was a revolution in aerial fire power, double the armament of any previous RAF fighter. Though of light calibre, the eight British MGs made up for it by sheer volume of concentrated fire. The Spitfire's guns were set to converge at 250 yards and some pilots had them set for 200. This armament compared favorably with the two slower shooting, longer-range 20mm cannon (only 60 rounds apiece) of the Me 109E3, which also carried two 7.92mm machine-guns. The sturdier Hurricane was a better gun platform than the Spitfire whose wider-spread .303s had a heavier recoil. It could also carry more ammunition, 334 rounds per gun to the Spitfire's 300—not a negligible difference when a battery firing rate of 160 bullets per second could exhaust the ammunition belts in 15 seconds.

The eight-gun concept had been introduced against a certain amount of crusty opposition as had bullet-proof glass windcreens, for which Dowding had had to argue against colleagues who favored open cockpits. Pressing this improvement on the Air Staff, Dowding added in some desperation: 'If Chicago gangsters can ride behind bullet-

1



Imperial War Museum

1 The first in a great lineage of Spitfire types. The prototype, specification F37/34 No. K5054, which had its first flight on 5 March 1936. This aircraft was powered by a Merlin C, giving 990hp at a height of 16,250ft. Among the changes made to later versions of the Spitfire were a tail-wheel instead of a skid, protruding exhausts instead of flush types, and a bubble canopy in place of the flat cockpit hood to give better visibility.

2



Ministry of Defence

2 A Hurricane IIC wearing the colors and markings of No. 257 Sqdn. based at North Weald during the Battle of Britain. Note the distinctive hump, a recognition feature when compared with the Spitfire.

3



Ministry of Defence

3 After being sold as scrap in 1947, this Merlin XII-engined Mk. IIA Spitfire showing No. 266 Sqdn. markings was on static display for 20 years. It was renovated in 1967 and flew again. All Mk. IIA's were built at Castle Bromwich factory in Yorkshire.

4 Hurricane PZ865, a Mk. IIC version, compared with (5) the immediately recognisable elliptical-winged Spitfire, a Mk. IIA.

proof glass, I see no reason why my pilots should not do so too'. Though protection was given to the cockpit, British fighter pilots, particularly those in Hurricanes, were highly vulnerable to fire and a number of terribly burned survivors spent many months, sometimes years, under plastic-surgery and treatment at the Queen Victoria Hospital, East Grinstead, Surrey, from their beloved 'Maestro', Archie McIndoe, (the late Sir Archibald McIndoe) RAF Consultant in Plastic Surgery. McIndoe's patients named themselves his Guinea Pigs and formed their own Guinea Pig Club in a wooden hut ward not long after the Battle of Britain ended.

Tom Gleave, a retired Group Captain and to this day Chief Guinea Pig, suffered what he describes as 'standard Hurricane burns'. His face, hands, arms and legs were burned and McIndoe gave him a new nose, but there is a patch of pale dead-looking skin on his forehead where his new nose came from. Gleave had been leading an attack on a formation of Ju 88 bombers when the fire started. Luckily, the explosion in his burning aircraft hurled him out of the cockpit, for a pilot could not usually expect to survive more than a minute in a blazing Hurricane.

Losses which led to the needs to reinforce front-line squadrons began to mount in mid-August, especially from 13 August, the day selected by Germany as 'Eagle Day', for the launching of an offensive planned to win air superiority over Southern England and thus create a favorable condition for the invasion. It was at this stage that four Americans who fought in the battle saw action, all in Spitfires. One of the first pilots airborne on Eagle Day was an American volunteer in No. 601 Squadron. Son of an American banker, Pilot Officer Billy Fiske, his country not yet at war, had no need to be seeking trouble over England as his squadron, No. 601, scrambled from Tangmere airfield before breakfast.

Already a veteran in 1940 terms, Fiske had seen more action than his three compatriots in the neighboring No. 609 Squadron, Pilot Officers Andy Mamedoff, Red Tobin and Shorty Keogh. In the fighting before breakfast on Eagle Day he was credited with one Ju 88 probably destroyed and another damaged. But, unhappily, Billy Fiske was to die three days later when, returning to Tangmere, Ju 87 Stuka dive bombers struck as he attempted to land to refuel. With airfields under regular attack, refuelling was often a desper-



4 ate business, necessitated by the then range of the aircraft: Hurricane, 460 miles; Spitfire, 575 miles, but only 395 miles allowing for take-off and 15 minutes combat. Refuelling was also painfully slow. The Hurricane's main tank needed 69 gallons of 80 octane aviation fuel, the faster Spitfire rather more.

On 13 August, No. 609 Squadron recorded in its Operations book 'Thirteen Spitfires left Warmwell for a memorable tea time party over Lyme Bay and an unlucky day for the species Ju 87 in which no less than 14 suffered destruction or damage in a record squadron bag which also included five of the escorting Mes'. An Me 109 could outdive a Hurricane and a Stuka might, but there was no escaping a tail-hugging Spitfire unless it was 'jumped' itself. By sunset on Eagle Day Dowding's Hurricanes and Spitfires had flown 700 sorties some as many as three each, to defend Britain from 1,485 sorties flown by the enemy, one-third of which were bomber attacks. In the post-war count the *Luftwaffe* lost 45 aircraft to the RAF's 13.

Attacked from two sides

But the defenders faced an even bigger test on 15 August, the first and only day on which the RAF had to counter the concerted attacks from all three *Luftflotten*—two, accustomed opponents Nos. 2 and 3, operating from France and the Low Countries and *Luftflotte* 5 coming from Norway against Eastern Britain. Hermann Goering reckoned that the RAF would have to abandon its airfields in Southern England. No. 12 Group, north of London, did think that the battle might be fought the more effectively from the rear. Repeated take-offs and landings exposed AVM Park's southern-based Hurricanes and Spitfires to destruction on the ground while taking on fuel and ammunition. Moreover, pilots operating from some of No. 11 Group's forward airfields invariably needed to climb inland away from the approaching enemy waves in order to gain sufficient altitude to turn and fight.

The employment of *Luftflotte* 5 on 15 August, however, introduced a new and contrary factor. Given sufficient radar notice the fighter squadrons of No. 13 Group, north of No. 12 Group, had to intercept raiders crossing the North Sea. This was a more hazardous flight for the enemy than that over the narrower English Channel. It also gave longer radar warning of the approaching force, 65 He 111 bombers and 35 Me 110s 100 miles out to sea from the east coast of Scotland. No. 13 Group scrambled three Spitfire squadrons and one of Hurricanes. From their advantage of altitude, an advantage so frequently denied defenders of SE England, the Spitfires dived into the enemy formations. The *Luftwaffe* lost eight bombers and seven fighters, the RAF none.

Not least among technical advances made during the battle was the rapid conversion to constant speed of the three-blade variable two-pitch airscrews, with which Hurricanes and Spitfires had been equipped. No. 609 Squadron reported, 'Quite unheralded, a crew of de Havilland fitters descended on the squadron and proceeded to convert the VP airscrews to CS. One aircraft was completed in the evening and flown. The improvement in performance is outstanding and it was remarked that the Spitfire now "is an aeroplane".' This conversion was the contribution of Captain Geoffrey de Havilland, pioneer aircraft manufacturer. De Havilland was so convinced that the margin between the performance of VP and CS propellers could possibly decide the battle that he arranged privately to convert a test aircraft with an operational

squadron. Consequently, shortly before Eagle Day every operational Spitfire and Hurricane had been converted, although no contract had been negotiated and the company had no certainty of receiving payment.

It was also fortunate so far as improvements were concerned that the Hawker and Vickers-Supermarine test pilots Flight Lieutenant Dickie Reynell and Flying Officer Jeffrey Quill, took part in the battle. Before he was killed on 9 September, Reynell made a number of reports which led to modifications. Quill had flown Mitchell's prototype in 1936. As a key civilian he had had to 'pull strings' to obtain what he regarded as a 'spot of practical', even though he belonged to the RAF officer reserve. Joining No. 65 Squadron he soon realized that, aged 34, he was an elderly gentleman in a business for which Dowding decreed, 'only exceptionally should officers over 26 years of age be posted to command fighter squadrons'. It was Quill who advised on the conversion of Spitfire I's original fabric-covered ailerons to sheet metal so that lateral control was not distorted at speeds over 220mph.

Hurricane's unbeatable claim to glory

If the Spitfire has stolen the Hurricane's thunder for posterity, the Hurricane has one claim to glory which the Spitfire cannot match. The only Victoria Cross awarded to a fighter pilot during the Battle of Britain was won in a Hurricane, though as it happened the pilot had transferred from a Spitfire squadron! On 16 August, 23-year-old Flight Lieutenant James Brindley Nicolson, formerly of No. 72 and now in No. 249 Squadron, was patrolling above Southampton in a cloudless sky and thinking about his wife who was expecting a baby. Then, there they were, three Ju 88 bombers dead ahead. Together with two other Hurricanes, Nicolson closed to within a mile until, at the last moment, he found that they had been beaten to the kill by speedier Spitfires—'It was curtains for the three Junkers'.

Meanwhile, an Me 110 had managed to slip onto Nicolson's tail. Within seconds the Hurricane was on fire. Nicolson, blinded by blood in one eye and wounded in a leg before he had even the chance to fire his first shot in anger, was determined to turn the tables. Hurling his plane to starboard, Nicolson forced the Me 110 pilot to dive past him and into his gunsight. Diving at 400mph, the Hurricane cockpit was now well ablaze from the contents of the gravity petrol-tank, which when hit by cannon shells, ignited by engine heat, but Nicolson, in waist-high flames, stuck to the enemy fighter until he saw it crash into the sea. Only then did he decide to bale out. The fire had badly burned his right hand and he struggled desperately to free himself from the seat straps. As he fell, Nicolson faced the further ordeal of pulling his parachute ripcord with badly burned hands and, even then, he encountered a fresh and unexpected danger. Members of the Home Guard, recruited to help repulse the invasion, fired at the descending pilot. Fortunately, ammunition was too scarce to allow much practice and they missed.

At this stage of the battle, as the *Luftwaffe* savaged Dowding's front-line airfields, to escape by parachute to fight again became a paramount part of a British fighter pilot's skill. On 18 August, for instance, the RAF destroyed 71 enemy aircraft for the loss of 27 fighters, but only 10 pilots. Nevertheless, in the previous ten days, Dowding lost 183 fighters in the air and 30 destroyed on the ground, with 94 pilots killed or missing and 60 wounded, many seriously burned. Planes were no problem, Hurricane production was



250 per month, with 150 Spitfires. Thus, while machines were being replaced at a rate of more than a hundred a week, Dowding was scraping the barrel for pilots.

Dowding repeatedly asked the Air Staff to release him pilots from Bomber and Coastal Commands. He was eventually and somewhat grudgingly allowed 20 bomber pilots and 33 Army Co-operation pilots—53 men who were given a six-day conversion course before being sent into action. By sunset on 18 August, new Hurricane and Spitfire pilots joining operational squadrons were so green that few had flown 10 hours solo on either type. Indeed, it was two days afterwards that Winston Churchill immortalised 'the Few', some 2,365 pilots who fought in the Battle of Britain including 446 who died. When addressing the House of Commons on the general war situation he made his famous statement: 'Never in the field of human conflict has so much been owed by so many to so few'.

But the *Luftwaffe* had its troubles. Such were its bomber losses that Me 109 pilots were reined in by Goering who ordered them to give close escort to the bombers and even to the long-range Me 110 fighters. It was at this point that Galland asked him cynically for 'Spitfires', aircraft with which, by virtue of their maneuverability, he suggested it would have been easier to carry out Goering's orders which now called for round-the-clock bombing of targets in Britain. Thus, on 24 August, began a series of attacks with the intention of making Operation Sealion feasible. Such was the intensity of the raids on Park's 11 airfields between London and the sea that it was problematical just how long they could be used. After four raids on that day Manston was temporarily abandoned. In fact, Manston and Lympne,

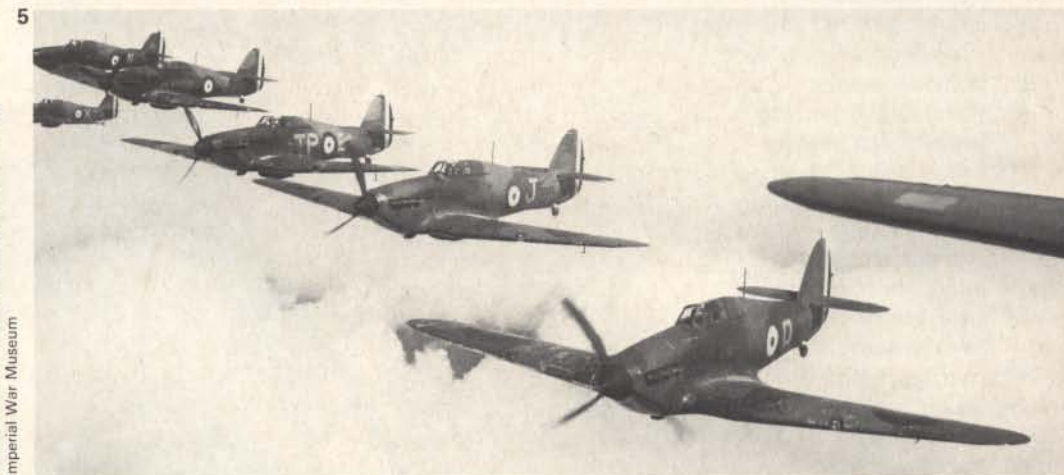
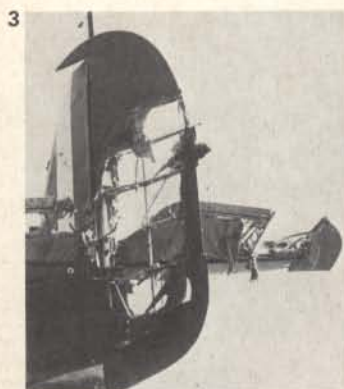
1 Sunlight gleams on a Hurricane IIC.

2 From the front: a Spitfire V; Spitfire IIA; Hurricane IIC; two Spitfires Mk. XIX

3 This severely damaged Hurricane of 151 Sqdn. flew back to base at North Weald in 1940.

4 A Spitfire cockpit with i/f panel (ASI, artificial horizon, rate-of-climb indicator, altimeter, gyro compass, turn-and-bank indicator). Engine dials are on the right.

5 A Hurricane squadron on patrol over France.



both on the Kent coast, were on several occasions, and for some days, inoperable and even Biggin Hill was so damaged that for one week only a single fighter squadron could use this important sector station. Fortunately, at the critical moment, Hitler himself stepped in and switched the weight of the attack from airfields to London.

The launching of the *Luftwaffe* 7-15 September blitz on the capital brought to a head the most controversial issue of the Battle of Britain; the question of the tactical use of Dowding's Hurricane and Spitfire squadrons. Considerable feeling had built up, notably among squadrons of Air Vice Marshal Trafford L. Leigh-Mallory's No. 12 Group behind London, that Park's No. 11 Group squadrons had been misused through their inability to form up in any significant

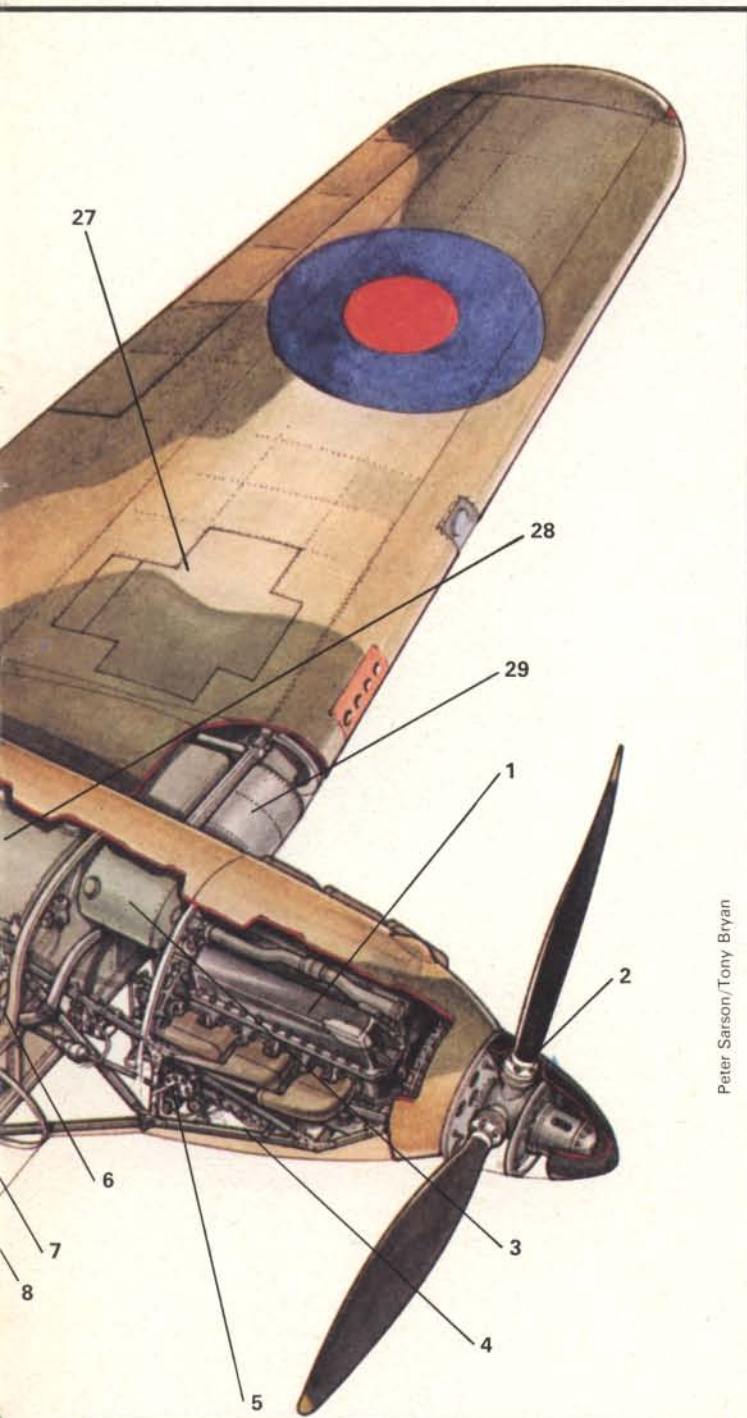
numbers at a fighting altitude because of the time element. As his airfields took heavy punishment, Park attempted to pair squadrons, like with like, and preferably using the slower Hurricanes to combat the enemy bombers.

But on 7 September, when Hitler turned on London in daylight, the forward defenses were swamped and some 300 bombers and 600 fighters of the morning raid were little molested until East London dockland was ablaze and the raiders on their way home. Only then had a competitive force assembled, including No. 1 (RCAF) Squadron of Spitfires, Nos. 303 and 310, two Polish squadrons of Hurricanes and two additional RAF squadrons, No. 19 (Spitfires) and No. 242 (Hurricanes). The *Luftwaffe* was harassed homewards, losing at least 40 aircraft to 28 defending fighters. Here,

**HURRICANE I (Late production Model.
No. 32 Fighter Squadron, Biggin Hill, Kent,
June 1940).**

- 1 Rolls Royce Merlin III,
1,030hp
- 2 Rotol propeller
- 3 Glycol header tank
- 4 Engine mountings
- 5 Hand-starter
- 6 Rudder pedals
- 7 Undercarriage
operating mechanism
- 8 Wing fuel tank
- 9 Four .303 Browning
MGs to each wing
- 10 Ammunition boxes
- 11 Starboard landing light
- 12 Starboard aileron
- 13 Starboard flaps
- 14 Insulated coolant pipe
- 15 Emergency hydraulic
hand-pump
- 16 Hydraulic piping
- 17 Oxygen bottle
- 18 Battery
- 19 Armor plating
- 20 Tail wheel
- 21 Rudder
- 22 Top identification light
- 23 Flare chute
- 24 Radio
- 25 Rear-view mirror
- 26 Reflector sight
- 27 Machine-gun access
panels
- 28 Reserve fuel-tank
(armored)
- 29 Leading edge oil tank
(port side only)

*Perhaps overshadowed
by today's powerful
supersonic machines,
these Battle of Britain
Hurricane IICs still
look full of fight.*



Peter Sarson/Tony Bryan



Ministry of Defence

then, it seemed, was justification for No. 12 Group's view. Let the enemy do his worst between the coast and London, form up a 'Big Wing' of Hurricanes and Spitfires and hit him hard, actually over London if necessary, and on the way back.

And so to the day which in retrospect spelt the beginning of the end for Germany in the World War II: 15 September 1940, 'one of those days of autumn when the countryside is at its loveliest', as Park later recalled. It was the day Dowding, Park, Leigh-Mallory, and their ground controllers, the pilots and the machines finally got it right. The setting was pure theater. It was almost as if a script had been provided right down to the detail of Churchill appearing with his wife at Park's No. 11 Group operations room at Uxbridge, Middlesex. As if on cue, Park told the Prime Minister: 'I don't know whether anything will happen today'—and then, at 1130, it did.

Given exceptional radar warning because of the time taken by the *Luftwaffe* to assemble 250 bombers and 700 fighters across the Channel, Park was able to anticipate the enemy force with 11 of his 21 squadrons in the air. He had 10 squadrons in five sets of pairs, while from No. 10 Group to the west No. 609 Squadron's Spitfires were racing to cover the Vickers factory at Weybridge, Surrey, and the King's home at Windsor Castle, Berks., where new Hurricane and Spitfire aircraft were secretly stored. For by this time Lord Beaverbrook, Minister of Aircraft Production, had ensured that if the RAF lost 200 fighters this day, all but 18 could have been replaced from the week's production and repair output. Behind London, a 'Big Wing' of 60 Hurricanes and Spitfires of Leigh-Mallory's No. 12 Group was also assembling, led by the legless pilot, Squadron Leader Douglas Bader.

Luftwaffe's greatest shock

Forward, Park's paired squadrons, Hurricanes to engage the bombers and close fighter escort, Spitfires to divert the high-flying screen of Me 109s, did well. But Bader's Big Wing gave the *Luftwaffe* the greatest shock it had yet encountered, fighting with an aggressive spirit engendered by the nature of its leader and owing much to the mixed composition of the force—Canadians, Czechs, Poles, and British. One Spitfire Flight Leader shot down four aircraft and still had half his ammunition left. A lone Hurricane dived beneath a formation of 12 Me 109s, shot down the rearmost one, climbed steeply and got another with a half roll dive before breaking off having damaged a third.

Mitchell and Camm had forged the weapons for the Few who now drove the *Luftwaffe* in headlong retreat from London. Hurricane and Spitfire pilots were elated at the results of fighting in larger formations following frustrating weeks of confronting major raids in threes, sixes, or at best, nines and twelves. Fourteen Hurricane squadrons made Central London the graveyard of any raider that got through. Although history does not date the end of the Battle of Britain until 31 October, the *Luftwaffe's* daylight loss on 15 September of some 60 aircraft to the defenders' 26 (respective contemporary claims were 175 and 53) was enough to dissuade Hitler from invasion.

Hurricanes and Spitfires flown by 'The Few' had shown the world that the *Luftwaffe*, which had blasted the *Wehrmacht's* way through to the Channel coast, was not invincible and obliged it to conduct most of its future operations over Britain under cover of darkness.

Edward Bishop

THE WINTER WAR

Russia's army in 1939 out-numbered and out-gunned the Finns. And courage—aided by blood-freezing cold—was not enough



Finnish War Archives

When David defeated Goliath against all odds and against all expectations, he pioneered an example of human enterprise in war which has aroused admiration ever since. Although the Finns lost, where David won, it is the same sympathy for the underdog which explains the place in history Finland earned when, in November 1939, this small country of only 4½ million people chose to go to war rather than succumb to the territorial demands of its huge and immeasurably more powerful Russian neighbor.

These demands had been prompted by the urgent needs of World War II. In October 1939, the Russians had good reason to fear that the armies of Nazi Germany, which had just crushed Poland in four weeks, might have singled them out as the next victims. The logical springboards for a Nazi invasion of Russia seemed to be Finland and the Baltic states of Latvia, Lithuania and Estonia. As a defensive measure, the Russians needed to police these states.

On paper, comparisons between Russia and Finland were ludicrous. The Soviet Union had built the Red Army into a giant mechanized machine in the years between the two World Wars. In the same period, Finnish governments had tended to neglect military needs. As a result, in 1939, the Russians were overwhelmingly superior to the Finns in tank strength, air power, and armament of every kind. The Red Army was 10 times the strength of the Finnish forces. In the forest regions of northern Finland, Russian soldiers outnumbered Finnish by 42 to 1.

As for armament, the Finns could boast only a few old lightweight tanks and fewer than 100 small-calibre anti-tank guns. The Finnish air force, with one aircraft to every 18 the Russians possessed, consisted of 162 antiquated bi-planes and aged German Fokkers. Their 200 pilots were only one third of the number needed.

But the Russians, being so much stronger, were overconfident. They were so certain of victory that they reckoned 12 days would be quite enough to crush Finland. As a result, the Russians failed to provide their troops with suitable clothing for the merciless sub-zero temperatures of the Finnish winters. Thermometers regularly fell to 50° below freezing. In such temperatures, weapons froze, batteries froze, food froze—sometimes even blood froze.

The Russian High Command sent its troops into Finland completely unprepared for conditions like this. They wore nothing warmer than olive-brown tunics which offered as much protection as heavy overalls, and had inadequate underwear. At first, they even lacked overcoats! Another telling Russian weakness was that the Red Army of 1939 was far stronger in quantity than quality.

The Finns had a number of psychological and practical advantages. Their military inferiority forced them to be more inventive and more daring, and to fight the war with greater enterprise than the Russians thought it necessary to display. To counter the ravages of the cold, the Finns had dugouts and warming tents, and adopted a sensible multi-layered



Finish War Archives

style of dress. They also mastered the technique of protecting their weapons from freezing by frequent cleanings with petrol and gun oil. An antifreeze made from alcohol and glycerin was applied to the cooling systems of machine-guns.

The Russo-Finnish Winter War began with a 'diplomatic incident.' At 1545 on 26 November 1939, a scattering of artillery fire was heard near the Russian border village of Mainila on the Karelian Isthmus. Border guards stationed at Jappila on the Finnish side assumed the Russians were at target practice. That evening, Vyacheslav M. Molotov, the Soviet Foreign Minister, handed the Finnish Minister in Moscow a Note in which the Finns were accused of firing seven artillery shells across the frontier, killing four Russian soldiers and injuring another nine. Three days of diplomatic wrangling followed before the Russians 'tore-up' the Non-Aggression Pact they had signed with Finland in 1934. This cleared the way for the massive onslaught that took place on the morning of 30 November.

At 0800 that day, Russian heavy artillery, howitzers, tanks and machine guns began firing along the entire 800-mile length of the Russo-Finnish border. In more northerly stretches of the frontier, Soviet aircraft raked fields, roads and forests with machine-gun fire. They rained bombs down on small, undefended villages—leaving their wooden houses blazing. The barrage lasted 30 minutes.

Then, green rockets soaring up into the sky signalled invasion by 600,000 troops of the 7th, 8th, 9th and 14th Armies, accompanied by a huge mass of tanks, heavy guns and armored vehicles. In the south, at the Karelian Isthmus, between the Gulf of Finland and Lake Ladoga, nine divisions of the 7th Army attacked along the 90-mile Mannerheim Line of ditches, trenches, pillboxes, machine-gun nests, barbed wire, boulders and tree stumps. Named after Marshal Gustaf Mannerheim, 72-year-old C-in-C of the Finnish Forces, this was the only major frontier fortification the Finns possessed.

Farther north, one Soviet division invaded along the eastern shore of Lake Ladoga, joining up with one of three more divisions which struck out from Petroskoi. The two

△ *Suomussalmi, Finland, December 1939. Well protected against the freezing weather, troops like these attacked and harried the Russian convoys and then disappeared into the icy wilderness.*

◁ *Finnish troops retreating through the burning village of Suvilahti on 2 December 1939.*

▽ *Distressed and bewildered, a Finnish citizen wanders through the blazing ruins of a small town after Russian terror bombing.*



Finish War Archives



Russian snipers on the Karelian Isthmus, December 1939. Armed with Mosin-Nagant 7.62mm M1939 rifles with PE telescopic sights, they were among the nine divisions of the 7th Army to attack along the 90-mile Mannerheim Line.

other divisions made for Kollaa and Talvajarvi. It was intended that the 9th Army would strike along Finland's 'waistline' towards Suomussalmi, and the region where the Murmansk Railway would be able to supply the invaders. Some 150 miles to the north, in Lapland, the Russian 88th Division made a two pronged advance towards Salla. They joined up with the 122nd Division and paused to await the arrival of the 52nd and 104th Divisions which had invaded Arctic Finland through the port of Petsamo.

While the forests of the north shook with the rumble of Russian tanks, and the crunch of thousands of Russian feet trampling in their wake along ice-covered roads, aircraft from Soviet bases in Estonia were getting ready to bomb the Finnish capital, Helsinki. They appeared over the city at 1430 on 30 November with the apparent intention of pounding the railway station, harbor and airport. Faulty aiming, however, resulted in several Russian incendiary bombs falling on apartment blocks, houses and schools. Sixty-five Finns were killed and another 130 injured. The same day Viipuri, Hanko, Korka and other Finnish cities were also raided.

Russians' bull-like strategy

An important ingredient in Finnish tactics was Marshal Mannerheim's detailed understanding of the Russian military manuals. Consequently, Mannerheim had a good idea, in advance, of the bull-like strategy the Russians would employ. He was well aware, also, of the Russians' tendency to rely too much on the brute force of modern military hardware, and to follow the rule-book blindly and to the letter.

Anti-tank measures were a major aspect of the Marshal's plans. To stop Russian tanks breaking through the Finnish lines, Mannerheim arranged for six main obstacles to be placed in their way. Ditches, mines and traps provided the first hurdle, artillery guns the second and a barricade of rocks and more ditches the third. The fourth barrier consisted of men armed with 'Molotov Cocktails', hand grenades and bundles of TNT. Behind them, anti-tank guns lay in wait. The final line of defense was supplied by Finnish regulars and reserves.

The bulk of the Finnish soldiers fighting in the Winter War were reservists. These men tended to be wayward and

impatient both with mass discipline and with parade ground niceties like proper uniforms, salutes and tidy marching lines. Many of them were, however, highly skilled and experienced in ski-ing, hunting, tracking, sniping and navigating in a snow-covered wilderness. Marshal Mannerheim detailed men like this to more remote stretches of the battle-line where their talents and their zeal for individual enterprise could be used to good effect. Acting independently, they would make wide sweeps over the snowy northern tundra, harrying Russian columns wherever they found them and making maximum use of fog, snowstorms and the darkness of the night.

The Finns made maximum use of subterfuge and sabotage. They filled wells with earth, destroyed stores of food and clothing and burnt down whole villages rather than let them provide the Russians with shelter or comfort. Strips of cellophane were laid over frozen lakes. When viewed from the air, the cellophane took on the appearance of a large hole, and fooled Russian reconnaissance pilots into thinking the lake could not be crossed. Russian pilots were also duped into bombing Finnish positions manned by dummy men and horses—made from straw.

Large areas of the Finnish countryside were turned into a maze of minefields. Farms, huts, houses, haystacks and piles of manure were mined. Barn doors were attached to strings of explosives and stretched trip-wires across doorways which, when crossed, detonated a stack of grenades. The Russians discovered that anything and everything would explode at a touch, from a dead pig lying in a farmyard to a loaf of bread left on the kitchen table to fur capes draped temptingly over chairs.

Similarly, the roads of Finland became sites for sabotage and ambush. Mines were concealed beneath innocent looking mounds of snow. Guerillas, hidden behind trees, in holes covered with branches by the roadside or beneath snow-smothered bushes would wait for a Russian armored column to pass by. When the tracks of the lead vehicle detonated the mine, the rest of the column would be brought to a halt. The Finns would then leap from hiding and derail tanks by forcing logs or crowbars into the treads. In such clashes, close-quarter assaults by Finns wielding 'Molotov Cocktails' were not unusual. The casualty rate

was frightening. As many as seven out of 10 attackers were killed by the explosions these makeshift incendiary bombs caused. The Russians were either roasted or gassed to death by 'cocktails' exploding near a tank's air intakes or the driver's aperture, or they were slaughtered when they flung back the hatches and tried to escape. Finnish snipers and machine-gunners, lying in wait, opened fire as enemy fled the blazing tanks. Dead Russians keeled over in the snow, petrified within seconds by the extreme cold into the agonized attitudes they had struck in their last moment of life.

Those Russians who managed to survive these assaults would attempt to escape into the forests that lined the roads. There was little hope for them there. Either the Finns followed the tracks they printed in the snow and shot them down or they were left to wander about until they died from cold, hunger or loss of the will to survive.

In the second and third weeks of December, whole battalions came storming towards the Finnish positions at Taipale at the eastern end of the Mannerheim Line. In such bunched masses they provided perfect targets for the waiting Finnish machine-gunners. The result was wholesale slaughter. When one division was obliterated, a second was sent in to repeat the mindless performance. They lost not only enormous numbers of men, but 18 of their 50 tanks. Despite the intensive artillery barrage, a thorough pounding of the Finnish positions by Russian bombers and the efforts of a third, fresh division on 17 December, the 11-day onslaught on Taipale failed. The Finns' defenses held. Russian tactics during a five-day battle at Summa (17-21 December) were just as foolhardy, and had a similarly dismal result including the loss of 58 tanks.

Trapped and obliterated

Meanwhile, near Suomussalmi, some 340 miles to the north, yet another Russian division, the 163rd, was trapped by the Finns as it straggled out along five miles of road. The Finns surged out of the woods, sliced up the division into isolated segments and then simply waited for cold, hunger and fear to do their work. Then, they attacked with grenades, guns and knives and all but obliterated the Russian force as a fighting unit, killing 5,000 men.

The same ruthless methods were employed in the air. Finnish pilots thought nothing of solo attacks on whole formations of enemy aircraft. One of them, Lieutenant Sarvanto, set a world record with a lone assault on seven Russian bombers, in which he took four minutes to shoot down six of them. Another Finnish pilot, Lieutenant Tatu Huhanantii shot down three Russians in a single battle and later made his last, eleventh, kill by smashing his own crippled, blazing plane into a Soviet aircraft.

The humiliating disgrace the Red Army had suffered was not the only emergency Stalin had to tackle. British plans to help the Finns could place Russia in an invidious political position. Since Britain was at war with Nazi Germany, British intervention on the Finnish side could force Russia to enter the conflict on the German side. Stalin realized that the only way to prevent this happening was to defeat the Finns quickly and decisively.

A savage shake-up of the Red Army leadership followed. Some commanders were shot. Others were dismissed and replaced. To replace Voroshilov and Meretskov, Stalin appointed Marshal Semyon Timoshenko to take over both their jobs. Timoshenko, until then Commander of the Military Districts of Kiev, Kharkov and the Northern Cauca-



Kollaa, 10 December 1939. A forward Finnish artillery spotter observing fire with a binocular telescope.

Finnish War Archives

Finnish and Russian divisions: a comparison

	Finnish	Russian
<i>Manpower</i>	14,200	17,500
<i>Rifles</i>	11,000	14,000
<i>Submachine-guns</i>	250	—
<i>Automatic rifles</i>	250	419
<i>7.62mm machine-guns</i>	116	200
<i>4-barrel AA MGs</i>	—	32
<i>12.7mm machine-guns</i>	—	6
<i>Rifle mortars</i>	—	261
<i>81-82mm mortars</i>	18	18
<i>120mm mortars</i>	—	12
<i>Field artillery: 37-45mm</i>	18	48
<i>75-90mm</i>	24	38
<i>105-152mm</i>	12	40
<i>Tanks</i>	—	40-50
<i>Armored cars</i>	—	15

Appendix C from 'The Winter War' by E. Engle and L. Paananen, Sidgwick & Jackson 1973

sus, was an intelligent and very appropriate choice. This granite-faced, shaven headed, totally dedicated soldier gave the Red Army what it most needed—iron direction, rigid discipline and a properly planned programme of training. In addition, Marshal Timoshenko's strategy was to gnaw gradually through the Finnish defenses so that they would ultimately collapse under the enormous pressure of the force being applied against them. The selected point of breakthrough was an area east of Summa where broad fields afforded the massed Russian tanks and infantry adequate room to advance and maneuver despite heavy snow drifts that blanketed the ground. The force which Timoshenko built up for this assault finally totalled 25 divisions. As a softening-up operation, Timoshenko kept his artillery hammering away at the Finnish positions throughout the lull that lasted until the end of January 1940. At the same time, the Russians staged small-scale attacks to wear down the Finns still further and weaken their defenses.

The main Soviet offensive began on 1 February, when the

1



Lehtikuvasto

2



Finish War Archives

3



Finish War Archives

Russian air force intensively bombed Finnish rearguard forces behind the Mannerheim Line. Then, the heavy artillery opened fire. This put up a barrage so concentrated that, in one day alone, 300,000 shells poured down upon the Finnish positions near Summa. In a nearby sector, 16 Finnish batteries of small-calibre short-range guns were confronted with 104 Russian batteries totalling 440 artillery pieces.

Signs of Timoshenko's training showed themselves in the 'steamroller barrage' the Russians employed. They plastered a wide area without moving their armament—simply by grading the range of their guns. Finnish forces dug-in some 15 miles east of Summa, around Lake Hatjalahti and Lake Muolaa, also had a taste of the new-found skill of the Red Army. Here, the Russians achieved greater co-ordination than before in the use of their different forces. Particularly between the artillery and infantry, when six divisions, supported by 500 aircraft and 28/45-ton tanks rolled towards the Finns under cover of a smoke-screen.

Whatever the Red Army had learned in the weeks since the December disasters, one feature remained unchanged. Russian commanders still paid scant regard for the lives of their men. Finnish machine-guns mowed down Russians by the hundred, until whole divisions were nothing more than stacks of corpses frozen into the snow.

Such chilling dispensability could not be afforded by the Finns. Quite apart from humanitarian considerations, the Finns did not have enough men to throw away in this reckless fashion. They had no trained replacements for their dead, and no more material resources to fall back on. Their ammunition was running low, and their captured weapons

were useless once Russian ammunition was exhausted. With their war effort in this fragile state, the exhausted Finns were about to discover that, given the increased efficiency of the giant enemy, grit, guts and cunning were no longer enough.

On 6 February, three Red Army divisions accompanied by 150 tanks, advanced along a five-mile front. At the same time, 200 Russian aircraft pulverized the Finnish defenses. Swamped on the ground and battered from the air, the Finnish lines began to crumble. On 7 February the Russians broke through near Lake Muolaa. They made two determined assaults on Summa. The next four days saw the 2nd, 3rd and 4th Finnish Divisions putting up a fierce, but futile, fight against the onslaughts of fresh, vigorous Soviet troops.

At 0820 on 11 February, a holocaust of gunfire—the heaviest artillery bombardment of the war—began to hammer the Finnish defenses at Lahde, near Summa. The shelling was so intensive that whole groups of defenders disappeared—blasted to bits by the barrage. Finnish casualty figures were reaching 30,000. Shattered regiments lost up to two-thirds of their strength. The Finns rushed in cooks, quartermasters, old men of the Home Guard and untrained, unprepared recruits to fill the gaps torn in their ranks. Exhaustion was now overtaking many of the more seasoned troops. Many fell asleep in their trenches oblivious to the roar of the battle and the thunder of the Russian tanks.

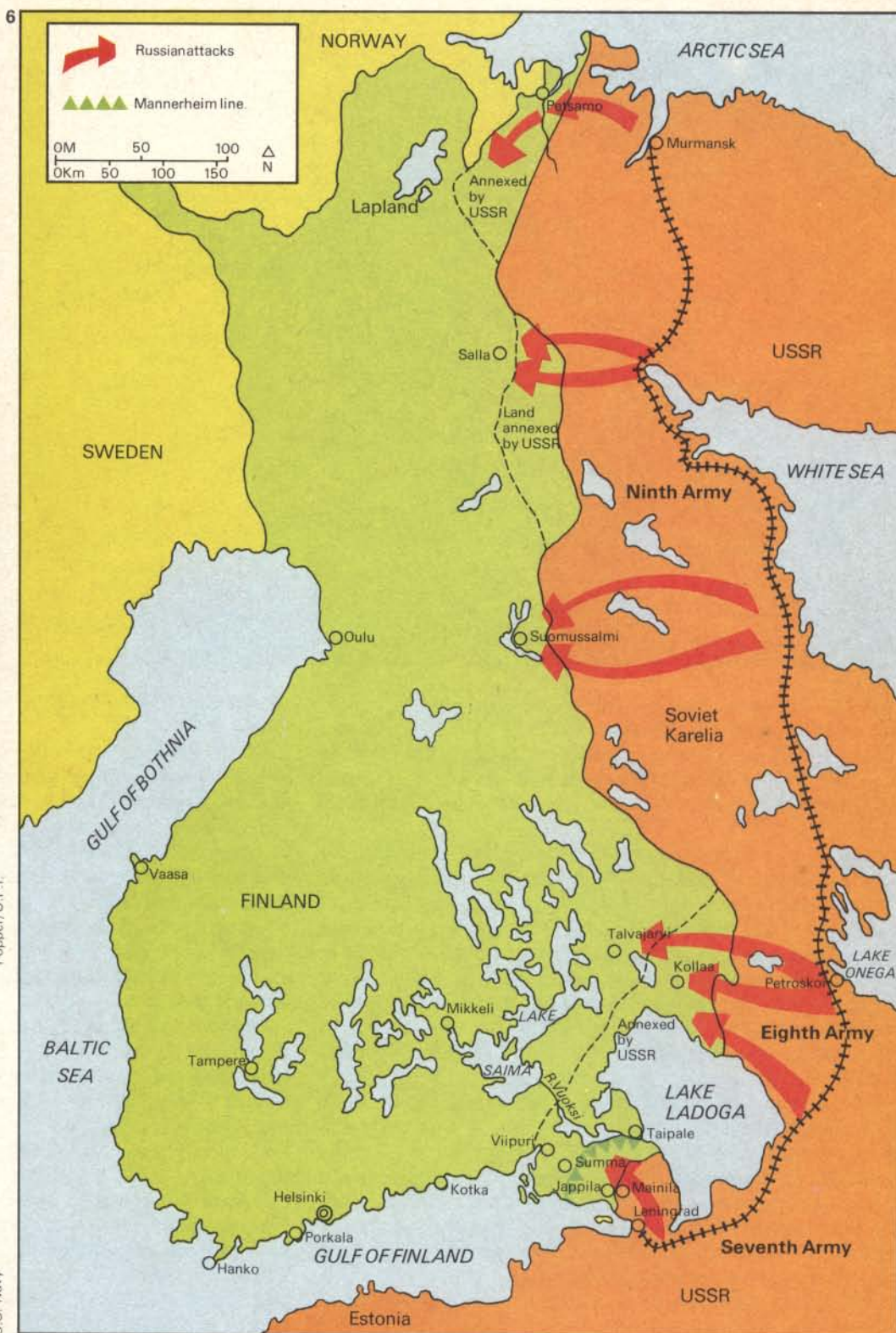
After two weeks of Russian attack, the Finns were already long past the point where they were able to launch a counter-offensive. It was also impossible to patch up the havoc the Russian guns had wrought at Lahde, to stabilize the line there or to mount an effective defense.

A black and white portrait of a man in a military uniform. He is wearing a dark, double-breasted jacket with numerous medals and decorations on the left side of his chest. He has a high collar and is standing against a dark, textured background. The man is looking directly at the camera with a serious expression.

5

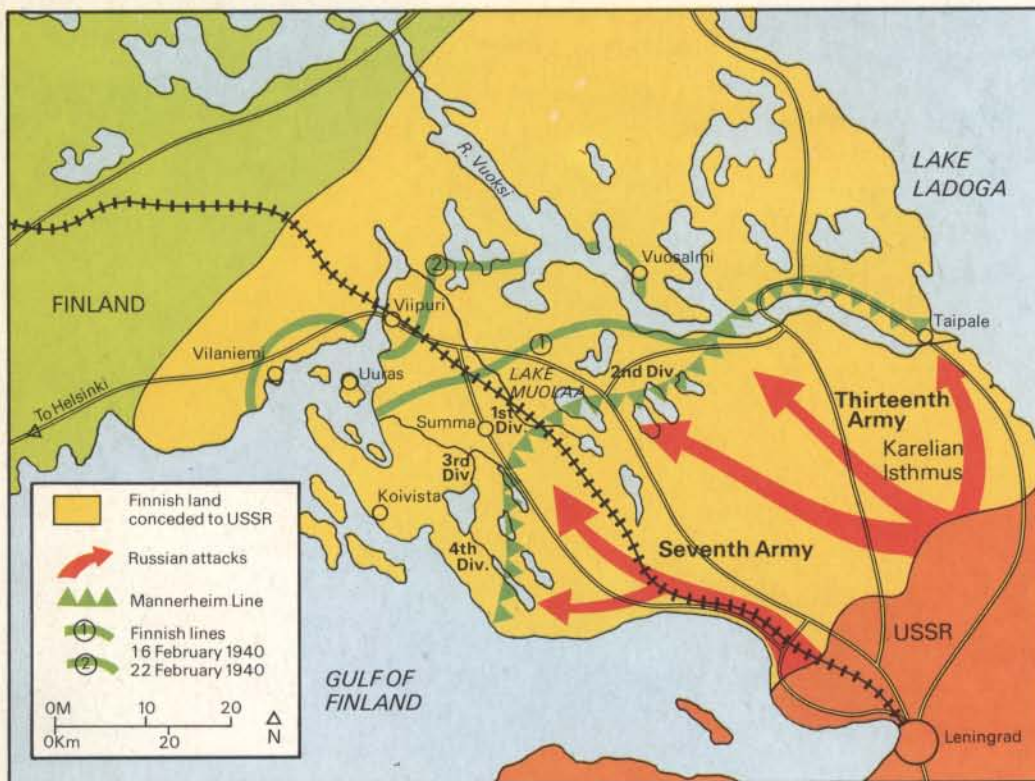
A black and white portrait of a man with a mustache, wearing a military uniform with a high collar and a cross medal on his chest. The man is looking slightly to the right. The number '5' is printed in the top left corner.

U.S. Navy



Davis and Harrison VP Ltd

4 Marshal Semyon Timoshenko was an intelligent, totally dedicated soldier. Stalin put him in charge of the Finnish campaign after the costly bungling of his two predecessors Voroshilov and Meretskov. **5** The Finns had Marshal Gustaf Mannerheim — a master tactician — as their CinC. It was his knowledge of their own military methods that cost the Russians so much in lives and lost pride. **6** Our map shows the main Russian thrusts in the February 1940 offensive. The 8th, 9th and 14th Armies pushed for Finland's heartland, while 7th broke through to Viipuri.



◁ In February 1940 the Russian 7th and 13th Armies broke through Finland's Mannerheim Line. The Finns were pushed back from their line of 14 February to a position near Viipuri on the 22nd. Viipuri was the most important Finnish city to fall to the Russians during the Winter War.

▷ The suffering caused by the Finnish climate shows in the drawn faces of these Russian POWs.

▷▷ Russian corpses frozen in death on the Suomussalmi front.

▽▷ A Finnish Rifle Regt. NCO. He carries a Suomi 9mm submachine-gun and has a 'Molotov Cocktail' in his belt. His ammo pouches are German. The 'Piesku' boots were commonly worn by troops from Northern Finland.

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On 14 February, Marshal Mannerheim arrived to survey the disaster area the Mannerheim Line had become. He drew the only sensible conclusion. He ordered the Finns to abandon their positions at the Karelian Isthmus and retreat to a second string of multiple defenses between two and 10 miles back.

Despite the ravages they had suffered, the Finns did not retreat in a spirit of dejection. As far as they were concerned, the war would be a fight to the finish, and they were not finished yet. Any notions of a walkover which the Russians might have entertained at this point were banished from their minds by resistance so ferocious that between 20 February and 24 February, the Finns killed 1,200 Soviet soldiers—including one entire battalion wiped out at Mustalampi—destroyed 23 tanks, and captured 280 rifles and 82 machine-guns.

Nevertheless, by the beginning of March, the plight of the Finns was so desperate, their defense line so weakened and their strength so badly drained that only the most eternal optimist could suppose that this was anything more than a last defiant flourish of Finnish valor and luck. Inch by inch, the Finns were being forced to give way in the face of the remorseless Russian advance. In late February and early March, they were putting up a vigorous defense in the area round Viipuri, Finland's second largest city. Although, elsewhere, they managed to thwart the Russians at most points of assault, units of the Red Army broke through at Lake Naikkari, where they set about expanding their bridgehead. The Finns were compelled to withdraw once more to a line stretching from Viipuri to Tali, Naatala, Kaltovesi and Vuoksi. Russian forces also began to sweep across the islands in the Viipuri inlet, many of which were taken by them only after the Finns had resisted to the last man.

By 8 March, the Russians attacking across the Viipuri inlet had consolidated their footholds around Haranpää and Vilaniemi. The east side of the Vuoksi river near Vuosalmi was also in Russian hands, and the collapse of the Finnish

defenses at Tali had allowed the Russians to cross the Tali river.

By this time, however, politics and politicians were already in the process of settling the Winter War. A last-minute chance for the Finns to snatch themselves from the fire had been quashed by the Swedes on 5 March. A Franco-British force, consisting of 100,000 troops and 62 bombers was waiting to come to Finland when the Swedish government informed the Finns that no foreign troops would be allowed to violate Sweden's neutral status by crossing over its soil. This was the end. On 6 March, a heartbroken President Kallio of Finland signed the document authorising a peace delegation to go to Moscow.

The terms of the treaty signed on 12 March were incredibly harsh, so much so that flags flew at half-mast in the cities and Finns wept openly in the streets. Some 25,000 square miles, one tenth of Finland, had been signed over to the Russians, including the city of Viipuri, the ports of Petsamo, Uuras and Koivisto, and the entire Karelian Isthmus.

During the 105 days the Winter War had lasted, 24,923 Finnish soldiers had been killed, and 43,557 wounded, a high proportion permanently blinded or otherwise crippled. The Finnish air force, which had risen to wartime strength of 287 aircraft, lost 61 of its planes. Russian bombing raids, in which 150,000 bombs of all kinds had been dropped, totalling some 7,500 tons in weight, had killed 700 Finnish civilians and injured another 1,400.

The Finns, understandably, could not reconcile themselves to the brutal dismembering of their country. In June 1941, when Hitler invaded Soviet Russia, they naturally welcomed the chance this gave them to retrieve their lost lands. They therefore embarked on the so-called 'Continuation War', in which they sided with the Germans but were not formally allied to them. The Finnish army and the German *Wehrmacht* fought separately, with only minimal and occasional co-ordination between the two.



U.S.N.A.



Malcolm McGregor



Popper/U.P.I.

The Finns reoccupied their former lands before the Continuation War ended, but the success was only temporary. In the backwash of Germany's ultimate defeat, they were forced to yield to Russia the port of Petsamo and a large area south of it, the Finnish half of Lake Ladoga and several miles on either side, as well as other areas. Finnish Karelia was lost forever, and the Porkkala peninsula, near Helsinki, was compulsarily leased by the Russians.

The Continuation War, in which some 55,000 Finns were killed, was a mere sideshow to the titanic Russo-German struggle of 1941-45. Finnish achievements during the Winter War had, however, exercised considerable influence on the Germans and had helped prompt their original decision to invade. As Winston Churchill had put it on 20 January 1940, the Finns had 'revealed for all the world to see the military incapacity of the Red Army', and this display caused the Russians very large losses in men and armor. Nikita Khrushchev put the numbers of Winter War casualties as high as one million men, which meant that one third of the Russian soldiers sent to Finland had been killed and injured. Marshal Mannerheim's more conservative estimate was 200,000, including deaths through cold and almost non-existent medical services. Mannerheim's assessment of the Russian's material losses stood at about 1,000 aircraft—one third of their air power as exercised in Finland—and 2,300 tanks and armored vehicles.

The Russians were gloomily aware both of the fact and of the significance of the bad showing the Red Army had made in Finland, despite its ultimate victory. 'All of us . . . sensed in our victory a defeat by the Finns,' Khrushchev wrote.

It was this conviction which sank into the egomaniac Adolf Hitler, and persuaded him that the *Wehrmacht* could invade Russia successfully. The Germans, like the Russians before them, also embarked on invasion in a confident frame of mind. They too grossly underestimated the military potential and fighting spirit of the enemy.

Brenda Ralph Lewis

AACHEN 1944

The GIs punched 22 miles into Germany—in the wrong place



Imperial War Museum

The greatest US involvement in ground fighting during World War II was not in the battle of the 'Bulge' nor the recapture of the Philippines, but in the little known battles of Aachen in the autumn of 1944. They were in some respects akin to the Meuse-Argonne offensive of 1918 which holds a similar place in World War I, but the Aachen battles were not ultimately successful. After three months two US armies only penetrated 22 miles into Hitler's *Reich* at a cost of 140,000 casualties, then they were subjected to a totally unexpected German winter counter-offensive in the Ardennes. Allied hopes of victory in 1944 died with the protracted and frustrating campaign on the Siegfried Line.

Back in the heady days of the Normandy breakout, comparatively little stress had been laid on the spectacular success of Lieutenant General Courtney H. Hodges' First US Army in their helter-skelter advance from the Seine, in accordance with General Dwight D. Eisenhower's 'Broad Front' policy, towards the Aachen Gap and Cologne. Hodges, in the last days of August, advancing on a three-Corps front with Major General 'Lightning Joe' Lawton Collins' 7th Corps on the right flank suddenly swung it NE towards Mons. Approaching this area were disjointed elements of 20 routed German divisions flushed out of Normandy by the British. Neither had been forewarned of the other's approach and both stumbled into an impromptu battle which ended in more than 2,000 Germans being killed and another 30,000 POWs being rounded up. First Army in fact had destroyed the last reserves of both Seventh and Fifteenth Armies leaving the way ahead to Liege and Aachen virtually open. It was this little-advertised victory which

enabled US patrols to be first across the Belgian border into Germany west of Aachen on 11 September. The First Army closed up on the west bank of the river Wurm.

Thereafter Eisenhower gave priority for supply to Field-Marshal Sir Bernard Montgomery's airborne carpet thrust towards Arnhem. Hodges closed down offensive operations on 22 September to shorten his front and bring forward another Corps to fill the gap in the Ardennes between his army and Patton's. Ahead on either side of Aachen from Geilenkirchen to the Huertgen Forest stretched one of the strongest parts of the West Wall. Hodges also knew that whatever its military value Hitler would not lightly let Aachen go. The days when cities could be carried at a run in the confusion of the pursuit were over. First Army would once more have to face new problems demanding novel techniques. In Normandy it had been hedgerows, now it would be concrete pillboxes, minefields and all the bedevillments of fighting in a densely populated industrial area. Inevitably success would depend more on the courage and skill of the individual infantryman than on air support or armored strength.

On purely military grounds retention of Aachen had little to recommend it, surrounded as it was by hills and lying within two defensive belts of the West Wall. The city's roads were relatively unimportant as First Army had already found adequate ones leading towards the Rhine both north and south of the city. Over a millenium before, however, in the days of the Emperor Charlemagne Aachen (Aix-la-Chapelle) had been capital of the Holy Roman Empire and thus had become identified with the mythology of National Socialism.

◁ A 57mm AT gun in action against German troops holding out in Aachen during the US drive for the city center.

▷ US soldiers take cover while a Sherman moves along an Aachen street to eliminate snipers at point-blank range.

▽▷ Grinning GIs load HE into the 'Aachen Express', an abandoned tram sent rolling into the German lines.

To strike at Aachen was to strike at a symbol of Nazi faith. Hodges therefore decided to encircle it using 30th Division and 2nd Armored Division of 19th Corps to strike south to link up with 7th Corps NE of Aachen near Wuerselen and thereafter reduce the city at leisure. West and north of Aachen lay a densely built-up urban area. Major General Leland S. Hobbs, commander of 30th Division, therefore chose to make the first penetration of the West Wall on a narrow front along the Wurm nine miles north of Aachen where the country was more open.

On 26 September over 300 guns began a systematic attempt to knock out all the pillboxes on the divisional front; results were disappointing. Heavy bomber support was arranged with the proviso by 30th Division that the USAF should avoid bombing them instead of the enemy as they had done with disastrous results at St. Lo in Normandy—75 men killed and 505 wounded by American bombs. Bad weather resulted in the attack's postponement until 2 October. When the air strike went in, many of the medium bombers missed their targets—one group bombed a town in Belgium 28 miles away! The fighter-bombers, although they found their target area, failed to knock out a single pillbox. The 117th Infantry Regiment had to fight its way forward supported only by its own artillery, mortars, heavy machine-guns and tanks. There followed a day of small battles amongst the houses of Marienberg and Palenberg.

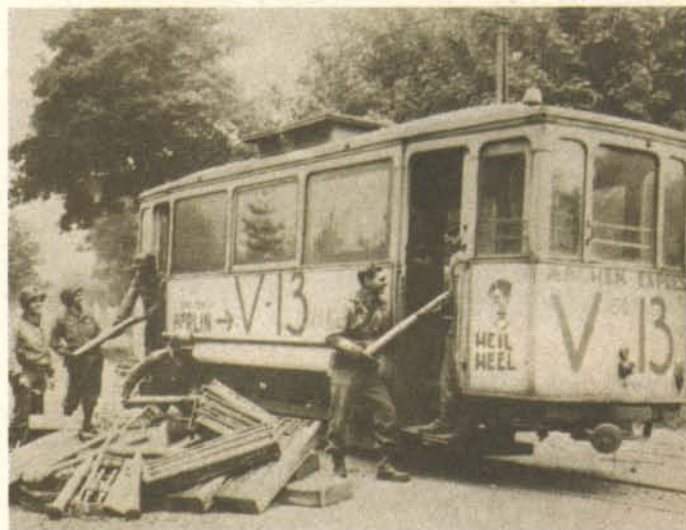
A volunteer flame-thrower operator of Lieutenant Robert P. Cushman's platoon, Private Brent Youenes, advanced within 10 yards of the first of two pillboxes and squirted two bursts into the embrasure. Private Willis Jenkins then shoved a pole charge into it. Out came five badly shaken Germans, lucky to be still alive. The platoon next shot up a machine-gun crew in a trench outside the pillbox and, creeping round the back of another, tossed hand grenades through the embrasure. Pte. Youenes squirted it with flame and the garrison surrendered. The platoon then dealt with three more pillboxes in like manner. An observer's comment, 'These infantrymen have guts' erred on the side of understatement. Meanwhile the Engineers worked on treadways across the quagmires of the Wurm to enable the tanks to cross; none, however, could get into action before nightfall.

On the next day house-to-house fighting in Palenberg often lapsed into hand-grenade duels. One rifleman, Private Harold G. Kiner, spotted a hand-grenade that landed between him and his fellow riflemen, threw himself upon it and saved his companions at the cost of his own life. He was posthumously awarded the Medal of Honor. On the right flank of 117th Infantry, the 119th Infantry Regiment established a shallow bridgehead along the Wurm in the face of intense artillery fire.

Close fighting like this characterised the struggle among concrete and wire for the next three days. On 4 October the Germans staged a full-dress counter-attack with tanks and assault guns supported by well-directed artillery fire: even the *Luftwaffe* made an appearance. They got nowhere despite goading by Field Marshal Walther Model. By the 6th, superior American morale and armament swung the issue in their favor. On the left, 2nd Armored Division



Imperial War Museum



Imperial War Museum

attacking SE carried all before it; on their right, 30th Division, despite fatigue, burst into the ghost town of Arlsdorf and the squalid streets of Merkstein. It was here that Private Salvatore Pepe refused to take cover but, rushing forward alone firing his rifle and tossing hand-grenades, wounded four Germans and caused 50 more to surrender. The 30th Division was now only three miles from Wuerselen, the planned point of junction with 7th Corps attacking from the south. Inch by inch the advance continued. By the evening of the 7th Hobbs, justifiably exuberant, could report to his Corps Commander, 'We have a hole in this thing big enough to drive two divisions through... this line is cracked wide open.' His division and 2nd Armored had literally ruptured the West Wall in the face of a surprisingly large concentration of heavy and medium artillery and over 50 assault guns. Both divisions had taken in their stride the shock of the abrupt change from exhilarating pursuit to a grim battle in fortified zones.

It was now the turn of 7th Corps to strike north with 1st Division and complete the encirclement of Aachen by advancing to Wuerselen. Major General Clarence R. Huebner of 1st Division planned to do this with the 18th Infantry Regiment. Only a two-and-a-half-mile advance was involved, but it would take them through a dense maze of pillboxes and over exposed hill crests. To take these hills was no easy task; holding them thereafter under heavy artillery bombardment would be even more difficult. In Aachen itself there were about 12,000 Germans. Furthermore, unknown to the Americans, Field Marshal Gerd von Rundstedt had promised to provide 3rd *Panzer*grenadier



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Imperial War Museum

◁ A 57mm AT gun is moved into position by soldiers of the 1st Inf. Div. during the 10-day fight for Aachen.

◁ ▽ Wary GIs, armed with rifle-grenades, pick a way into the city, whose 5,000 defenders included 200 policemen and the 246th Volksgrenadier Division.

▷ Half the US Army in Europe took three months to take the area shown on this map. The period was a third of the 1944-45 campaign, cost half its US casualties and involved 19 Allied divisions.

Aachen itself, already a wilderness of rubble as a result of RAF attention earlier in the year, now found itself the target of 7th Corps artillery and fighter-bombers of 9th Tactical Air Force. An ultimatum to surrender delivered under a flag of truce, broadcasts on Radio Luxembourg and leaflets shot into the ruins by artillery on 10 October were all scornfully rejected by the garrison commander, Colonel Gerhard Wilck. Huebner had to commit 25th Infantry to a tedious battle within the ruins 'from attic to attic and sewer to sewer'. German resistance, reinforced by SS Battalion *Rink*, continued obstinate to a degree. Methodically, 26th Infantry inched their way forward. Outside the perimeter all attempts by I SS *Panzer* Corps to re-establish contact with the encircled garrison came to nought. Finally on the 19th Model abandoned the city to its fate.

But Col. Wilck issued an order of the day, 'The defenders of Aachen will prepare for their last battle. Constricted to the smallest possible space we shall fight to the last man, the last shell, in accordance with the Fuehrer's order'. Over the air he continued to affirm his 'unshakeable faith in our right and our victory'. By the night of 20 October, 26th Infantry, reinforced by two battalions of tanks, had corralled his few remaining soldiers into the western and SW suburbs. Next morning, Lieutenant Colonel John T. Corley's battalion, supported by a 155mm gun, approached a big air raid bunker at the northern end of the city. Faced by the threat of being blasted into eternity, Colonel Wilck surrendered. He had fought to a finish. The battle for Aachen was over; the once proud city, the first city of the *Reich* to be captured, lay in utter ruin. Burst sewers, broken gas mains and dead animals raised an overpowering stench.

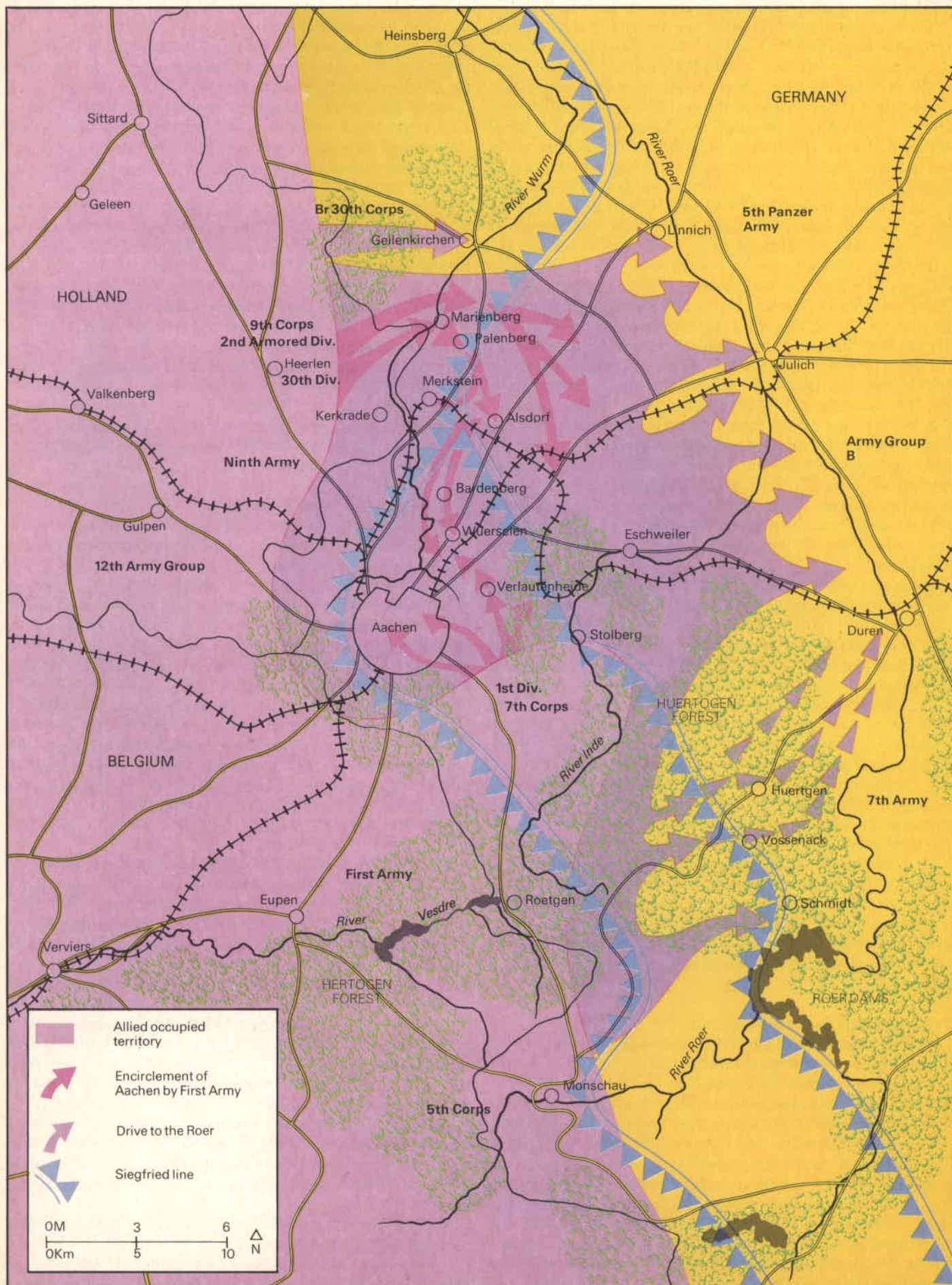
It had been a costly battle. The 30th Division lost over 3,000 men, the two battalions of 26th Infantry 498. Throughout the armor had been forced to fight in penny packets cheek by jowl with the infantry. It had been a soldiers' battle in which Allied air power and material superiority counted for less than the fighting spirit of the infantry and the tank crews. Between them 1st and 30th Divisions had taken some 12,000 prisoners. What was surprising was the skill with which the German commanders had handled the many miscellaneous elements thrown piecemeal into the fighting as the days went by. Even more surprising was the tenacity with which their troops continued to fight.

Long before the battle it had become evident that Model, commander of Army Group B, whose frontage coincided almost with that of General Omar N. Bradley's 12th Army Group, had succeeded in establishing a well organized defense of the West Wall astride the Aachen Gap. The morale of his troops was high, and even his second-class troops, established in fixed defenses, built-up areas and woods, could be formidable. Stolberg's 4,000 defenders put up a week's street fighting. Much bitter fighting in ever-shortening hours of daylight and deteriorating weather would have to be faced before the line of the river Roer, 12

Division and 116th *Panzer* Division under I SS Corps for counter-attack when the situation was ripe. Huebner's preparations included the provision of special pillbox assault teams equipped with flame-throwers, Bangalore torpedoes and pole and satchel charges. A battery of 155mm guns and a company of tank destroyers were also provided to hurl point-blank fire against the pillboxes.

Attacking at night on 8 October and again on the 9th, the 18th Infantry fought their way forward to Verlautenheide, half-way to Wuerselen. Here they had to endure the most intense artillery fire yet encountered in the campaign. Despite fatigue, the 18th Infantry faced the prospect of a counter-attack with determination. It came in full force during 15-16 October. German losses were heavy; over 250 dead were counted in front of 16th Infantry Regiment. Altogether a third of the attackers were killed to no avail.

Meanwhile, from the north, 30th Division had turned southwards to meet 1st Division, in the process attracting particularly vicious attacks by I SS *Panzer* Corps. Amidst the slag heaps and pit heads around Bardenberg the reserve battalion of the 120th Infantry Regiment knocked out six tanks and 16 half-tracks, the CO, Major Howard Greer, personally accounting for two with his bazooka. Almost hourly fresh German units were fed into the struggle. But divisional morale remained unshaken, despite 2,020 casualties sustained in the past 10 days. All efforts on their part to get forward still continued to meet vicious and obstinate resistance. The pressure on Hobbs from his superiors to close the now mile-wide gap and get on to Wuerselen became almost unendurable. On 16 October he struck again with 119th Infantry as his spearhead against the dug-in tanks and pillboxes blocking the way forward. In the mid-afternoon, 18th Infantry in the south spotted American troops on the ridge SW of Wuerselen. They were the two survivors of a patrol of 119th Infantry, Privates Edward Krauss and Evan Whitis. At 1615 these two, quickly reinforced, had the honor of closing the ring around Aachen.



miles ahead, let alone the Rhine, could be reached.

It is an indisputable fact that on the whole the German Army still outclassed the Allies in the flexibility and simplicity of its organization and in the professional skill of its battle experienced corps and divisional commanders and their staffs. In the debacle at the end of August and the first week of September, although the Seventh and Fifteenth Armies had been reduced to skeletons, most of their staffs had survived and still continued to function. With the aid of Military Police and *Waffen SS* detachments they succeeded in regaining a measure of control. Hitler rushed forward First Parachute Army to fill the gap between what remained of Seventh and Fifteenth Armies.

Heinrich Himmler, commanding the Home Army in addition to his duties as Minister of the Interior, Chief of Police and Head of the SS, had put all his weight behind the drive to fill the ranks of 43 *Volksgrenadier* (the People's Grenadiers) Divisions now being formed. To supplement the artillery Hitler ordered 12 motorized brigades (about 1,000 guns), 10 *Werfer* Brigades, 10 assaultgun battalions and 12 machine-gun battalions to be raised. Himmler diverted the best of the manpower and equipment into the *Waffen SS* which now composed one third of the *Panzer* and one fourth of the *Panzergrenadier* divisions. The great strength of these divisions lay in their young officers—Nazi to a man, coarse, arrogant and cruel, but well trained and ruthless in battle. From them Hitler planned to produce a new generation to replace the regular officers of the *Wehrmacht*.

'Unconditional surrender' and the announcement of the Morgenthau Plan on 24 September, which revealed the Allied intention of turning Germany into a third class agricultural state, reinforced Joseph Goebbels's propaganda appeals to the German people. Now that the enemy stood on the sacred soil of the Fatherland a deeply felt, instinctive love of country prompted all, soldiers and civilians alike, to fight on in the belief that the Fuehrer in some mysterious way would emerge finally triumphant like Frederick the Great when all seemed lost in the Black Year of 1759. Behind the ramparts of the West Wall and depths of the Huertgen Forest they would fight on as the nights grew longer and the autumn rains slowed down the Allied armies and diminished the threat from the air.

As a matter of strict nomenclature, defined by the US Army Military History Department, the battle of Aachen ends with the fall of the city. Popularly, in the Allied Armies of the time and in European eyes, especially German, it also embodies all the operations of First and Ninth Armies east and west of Aachen in November and the first half of December.

Drastic steps had to be taken

At Brussels on 18 October Eisenhower revealed to the Army Group commanders his intention of continuing the battle on the Aachen front with First and Ninth Armies as a first step towards enveloping the Ruhr. He made it clear that serious logistic difficulties must first be overcome. Until the mouth of the Scheldt was cleared, enabling the port of Antwerp to be opened, no large-scale offensive could be sustained. Two other serious supply problems were causing him great anxiety. Surprisingly, US factories had failed to keep up with the Army's needs and an acute shortage had developed, which would take some time to make up. Eisenhower broadcast a personal appeal to the United States. Casualties, especially infantry riflemen and tank crews, had

been much heavier than anticipated. Drastic steps had to be taken to comb out and retrain as infantry men from other arms. For these reasons and the vagaries of the weather affecting air support a resumption of the battle was deferred for nearly a month. If there was no fog over the airfields in Great Britain there was always fog over the target area and vice versa. As a result autumn, with overcast skies, damp depressing fogs, persistent rain and ever shortening hours of daylight was already far advanced when on 16 November Bradley renewed his offensive towards the Rhine.

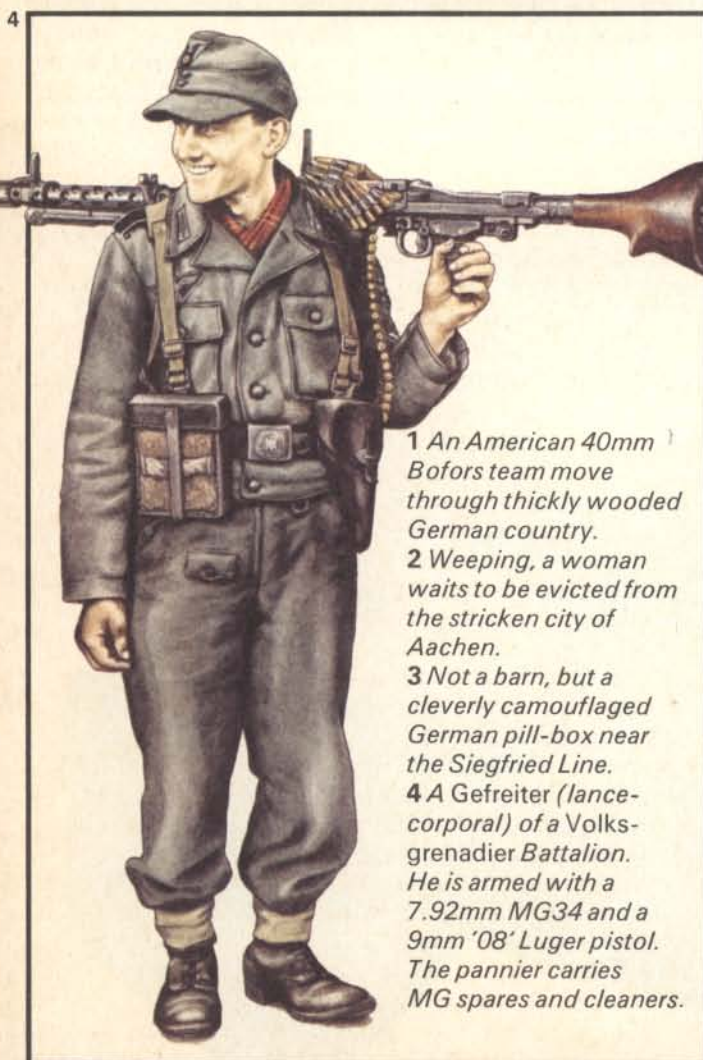
Immediately south of Aachen, First Army, now numbering 12 divisions, was to make the main effort. In particular it was to take the seven Roer dams at Schmidt, so that Eisenhower's future plans for the Second British and Ninth Armies could be implemented. North of Aachen the Supreme Commander brought in the unblooded Ninth Army, fresh from America, to advance simultaneously and protect First Army's northern flank. Some seven miles ahead and almost parallel to the front lay the river Roer, initial objective of both Armies. To reach it First Army would have to fight its way through the dense Huertgen Forest, three miles deep, flanked by extensive built-up areas. On Ninth Army's front the country was more open for tanks and for controlling the large forces now to be engaged.

Model's intentions were clear

By this time, although the Allies had not an inkling of his intentions, Model's plans for an Ardennes counter-offensive in December with Fifth and Sixth *Panzer* Armies and Seventh Army were already far advanced. Facing First and Ninth Armies he had Fifth *Panzer* Army and Seventh Army; in their immediate rear Sixth *Panzer* Army had already started to assemble. Altogether some 30 divisions would be concentrated here and large stocks of fuel and ammunition built up. Model had over 1,000 guns centrally controlled and plenty of ammunition. His losses of the early autumn had been replaced and his intentions were crystal clear—to fight the Americans in the Devil's Garden of the West Wall and Huertgen Forest; under no circumstances would he allow the Americans to cross the Roer. Furthermore, the Sixth *Panzer* Army, destined to execute the main effort in the Ardennes, must be kept out of the battle on the Aachen front but look like joining it.

Bradley imagined that an overpowering aerial bombardment would shatter German morale and then he intended to blast his way through with massed artillery. Over 1,200 heavy bombers of 8th USAAF and RAF Bomber Command were to 'take out' the towns of Duren, Julich and Heinsberg on the Roer. The forward troops would have 750 fighter-bombers on call. Late on the morning of 16 November vast fleets of aircraft passing over First and Ninth Armies signalled the start of Bradley's offensive. Results were disappointing—the 9,400 tons of bombs, for safety reasons, were dropped so far behind the German forward troops that they almost completely missed them. The attacking troops, four divisions on a 25-mile front, although supported by 1,000 guns, found themselves greeted by deadly small arms, artillery and mortar fire. It was small consolation and no help to them that six miles ahead three towns on the Roer had been destroyed in the heaviest tactical air bombardment yet launched.

Thus inauspiciously began the month long battle of attrition which occupies a place and significance in the history of the American Army similar to that of Verdun for the French and Passchendaele for the British. In the end it



1 An American 40mm Bofors team move through thickly wooded German country.
2 Weeping, a woman waits to be evicted from the stricken city of Aachen.
3 Not a barn, but a cleverly camouflaged German pill-box near the Siegfried Line.
4 A Gefreiter (lance-corporal) of a Volksgrenadier Battalion. He is armed with a 7.92mm MG34 and a 9mm '08' Luger pistol. The pannier carries MG spares and cleaners.

Malcolm McGregor

absorbed some 17 divisions, resulted in severe casualties both from enemy action and sickness and severely tested the morale of the troops. It was fought in vile weather—damp grey mist alternating with heavy downpours reduced the battlefield to a ghastly quagmire and precluded effective air support. Everything favored the enemy. In the Huertgen Forest, First Army plumbed the depths of misery. Here, hidden from view amongst the closely planted trees, protected by barbed wire, anti-personnel mines, log bunkers, log-covered foxholes and machine-gun emplacements, a few men could hold up whole battalions. There were so many mines that the attackers were reduced to using pitch forks to uproot the new wooden and glass types. Charles B. Macdonald, American Official Army Historian, vividly recorded the fighting in 'The Siegfried Line Campaign':

'It was attrition unrelieved. Overcoats soaked with moisture and caked with freezing mud became too heavy for men to wear. Seeping rain turned radios into useless impedimenta. So choked with debris was the floor of the forest that men broke under the sheer physical strain of moving supplies forward and evacuating the wounded. The fighting was at such close quarters that hand grenades were often the decisive weapon. The minefields seemed endless. A platoon would spend hours probing, searching, determining the pattern, only to discover after breaching one minefield that another just as extensive lay 25 yards ahead. Unwary men who sought cover from fire in ditches or abandoned foxholes might trip over lethal booby traps and turn the promised sanctuary into an open grave.'

The swollen bodies of the dead in grotesque positions added to the general horror. So bitter was the fighting that the village of Huertgen changed hands 14 times and the village of Vossenack eight times. Inevitably there were unfortunate incidents in which both officers and men cracked under the strain. More than 24,000 killed, missing, captured and wounded fell a prey to the fighting here; a

Imperial War Museum

Imperial War Museum

further 9,000 succumbed to the misery of the forest itself, the wet and the cold, trench foot, respiratory diseases and combat fatigue. To some extent, too, the torpor which comes from prolonged exposure without relief to shell fire and bad weather was reflected at command level.

In the more open country on the northern part of the front Ninth Army had better fortune and reached the Roer from Julich to Linnich on 28 November. Thanks to realistic training in the United States and the support of more lavishly supplied British artillery, the army stepped off on the right foot in this its first battle. It would be another two weeks however before First Army was able to close up with the river opposite Duren. The testimony of British officers who saw the American troops at this time should also be recorded. During the battle many officers and men of Guards Armoured Division were exchanged with the Americans. Their impression was that 'their methods might be somewhat curious and unorthodox, but there could be no doubt about the excellent results when put into practice. Divisions such as the 29th and 30th Infantry who fought in this battle could have challenged comparison with the finest of our own'. Lieutenant-General Sir Brian Horrocks, commanding the British 30th Corps on the extreme left flank of the offensive, and with the 84th US Infantry Division under his command, was most impressed by their performance in their first battle, their bravery, initiative and ability to learn from experience.

The first snow fell on 9 December; thereafter the days were chill and the sky overcast. By 15 December First and Ninth Armies, having advanced eight miles in a month, had reached the high ground overlooking the river Roer. But

three miles to the south the Germans still held Schmidt and the vital dams despite persistent attack. Attempts by RAF to burst them with their heaviest bombs had failed. On their right, on a 100-mile front in the Ardennes, Bradley only had some four divisions, two new to battle and two badly mauled in the Huertgen Forest. The Germans, fighting what was an essentially defensive action, had reinforced the front with 11 divisions including two *Panzer*. Of these, however, only one, 10th SS *Panzer*, was scheduled to take part in the now imminent Ardennes offensive. American losses, mostly in front-line units, in killed, wounded or missing in the Aachen battles since September now totalled 68,000, plus over 70,000 sick as a result of fatigue, exposure, accidents and disease.

Thirty years later it is fair comment to say that First Army fought in the wrong place. They would almost certainly have had greater success if they had advanced in September, as originally planned, south of the Ardennes in conjunction with Patton's Third Army. Better still, they could have been sent through the Ardennes, which the Germans had proved in 1940 and would soon confirm, were not the barrier to large-scale military movement they had traditionally been assumed to be.

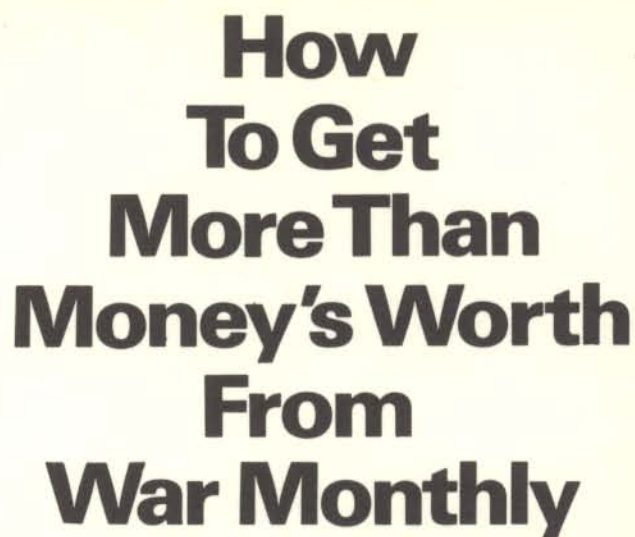
At 0530 on 16 December in darkness and fog from south of Monschau came the rumble of 2,000 German guns, their heaviest artillery barrage of the whole campaign. Model launched 13 infantry and seven armored divisions, followed by a further 10, a thousand tanks and 250,000 men into the Forest of the Eifel. The battles of Aachen were over. Another had begun.

Hubert Essame



The lethal, '88'-armed PAK43/3 Jagdpanther, Germany's successful tank-destroyer. Hitler watched the first demonstration on 20 October 1943. By the war's end, 382 had been made for heavy AT gun battalions. It was an ideal defensive weapon.

*Weight 51 tons
Crew 5
Armament 88 PAK 43/3
7.92mm MG34
Armor 60mm-80mm
Speed 29mph (46.6k/h)
Engine Maybach HL 230
Range 120 miles (roads)
60 miles (country)*



NEXT MONTH, read...

Irwin Spandau's Story. A GI relives the most frightening moment of his life—Normandy, H-Hour, D-Day, June 1944

Of disaster at Hog's Back Hill. The Battle of Barossa, 1811, when Spain betrayed her allies before the French

About the greatest non-nuclear explosion made by man, when 416 tons of HE were exploded beneath the Germans

How the bitter carrier confrontation called the Battle of Santa Cruz, 1942, led to Japan's eventual defeat at sea

About the powerful, deadly SS11 guided missile. The air-to-ground weapon that kills tanks two miles away

Medic! The non-fighting-man who goes into battle to save lives. A moving story of devotion and courage (Below)



WAR MONTHLY